

EARTH RESOURCES TECHNOLOGY SATELLITE FINAL REPORT

15 APPENDIX. FUNCTIONAL ANALYSIS

PREPARED FOR
GODDARD SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
UNDER CONTRACT NAS5-11260



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FACILITY FORM 602

EARTH RESOURCES TECHNOLOGY SATELLITE

FINAL REPORT

Volume 15 Appendix. Functional Analysis

April 17, 1970

prepared for

National Aeronautics and Space Administration
Goddard Space Flight Center

Contract NAS5-11260
item 5a

TRW Systems Group
One Space Park • Redondo Beach
Los Angeles County
California 90278

3. Furnishing a continuous up-to-date record of the allocation of performance/design requirements to hardware, software, and personnel for system management planning and assessment.
4. Exposing performance requirements interfaces for which the functional design of hardware, software and personnel end items for integration into the GDHS is unresolved.
5. Providing a total system functional description as a basis for deriving system integration, installation and test requirements and operational procedures to verify and demonstrate GDHS operational readiness.

The results of the functional analysis for ERTS Operations Control and Data Processing are set forth in two volumes. Volume 1 contains the top functional flow for the Ground Data Handling System (GDHS) and subordinate flows for each function identified on the top functional flow diagram. Volume 2 contains requirements allocation sheets for each of the functions identified on the top functional flow diagram.

FUNCTIONAL FLOW DIAGRAMS

PURPOSE

The functional analysis for ERTS Operations Control and Data Processing has two main purposes: (1) It furnishes the operational requirements baseline for use in deciding how the hardware, software and personnel elements of the Ground Data Handling System will be employed in the accomplishment of each functional requirement; and, (2) It provides a comprehensive description of the system performance requirements which furnishes a common language for communicating at all levels of customer and contractor management. Consequently, the ERTS Operations Control and Data Processing functional analysis is to be used in the following specific ways to:

- a) Support the GDHS system design process by:
 - 1. Furnishing a common description of the OCC and NDPF operations requirements baseline for defining and assigning the performance requirements for hardware, software and personnel end item design in order to achieve their integration into an effective GDHS design and to prevent each subsystem or end item design group independently inventing their own functional requirements assumptions.
 - 2. Providing a common record of judgmental factors employed in tradeoff considerations involved in deriving the ultimate system configuration.
- b) Support the GDHS project management during the system development and test by:
 - 1. Furnishing an easily understood functional description of the system.
 - 2. Providing a necessary document for evaluating the total system impact of changes in system performance requirements and end item designs as development progresses.

USER
REQUESTS
AND
INPUTS

1.1
LOG IN DATA AND
USER INPUTS AND
REQUESTS

1.2
DETERMINE
INITIAL
ACTIONS

34.0
PROCESS
USERS
QUERIES

1.3
INITIATE
COVERAGE
REQUEST

6.0
TRANSFORM
COVERAGE/OPERATOR
REQUESTS TO EVENT
LISTS

1.4
NOTIFY USER OF
EXPECTED DELAY

19.0
BULK PROCESS
RBV TAPES

20.0
BULK PROCESS
MSS TAPES

25.0
PROCESS IN
PHOTO
LABORATORY

23.0
GENERATE AND
MAINTAIN
ARCHIVAL FILES

1.5
MONITOR WORK
PERFORMANCE

1.6
DETERMINE
FOLLOW-UP
ACTIONS

1.7
REVIEW FINAL
PRODUCTS

1.8
CORRELATE USER
REQUESTS TO
PRODUCTS

1.9
AUTHORIZE
PRODUCT
DELIVERY

1.10
MAINTAIN
BROWSE
LIBRARY

1.11
LOG OUT
PRODUCTS

22.0
PROCESS USERS
INPUTS TO
ARCHIVAL FILES

TO USERS

21.0
PROCESS DCS
DATA AND
GENERATE MASTER
DIGITAL TAPE

34.0
PROCESS
USERS
QUERIES

26.0
PRECISION
PROCESS RBV

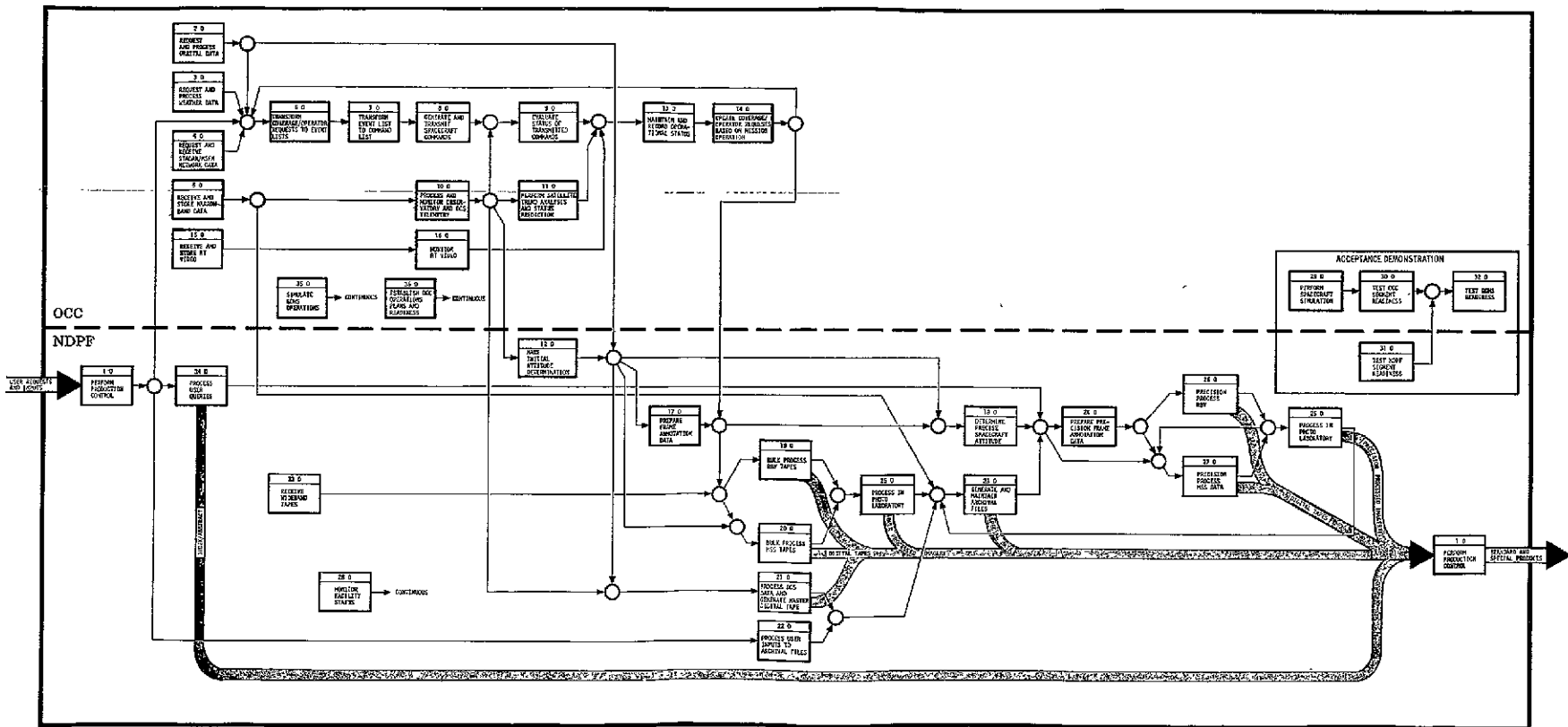
27.0
PRECISION
PROCESS
MSS DATA

1.12
WORK STATUS
REPORTS

1.13
MAINTAIN
INVENTORY
CONTROL

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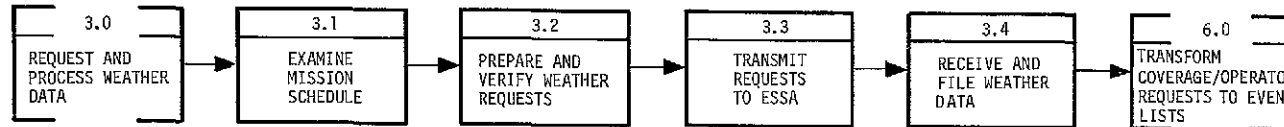
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED <i>[Signature]</i>			
GDHS		1.0 PERFORM PRODUCTION CONTROL	
CONFIGURATION MANAGEMENT			
DWG. SIZE	CODE IDENT. NO.	G002	
B	11982		
RELEASE DATE	SHEET		



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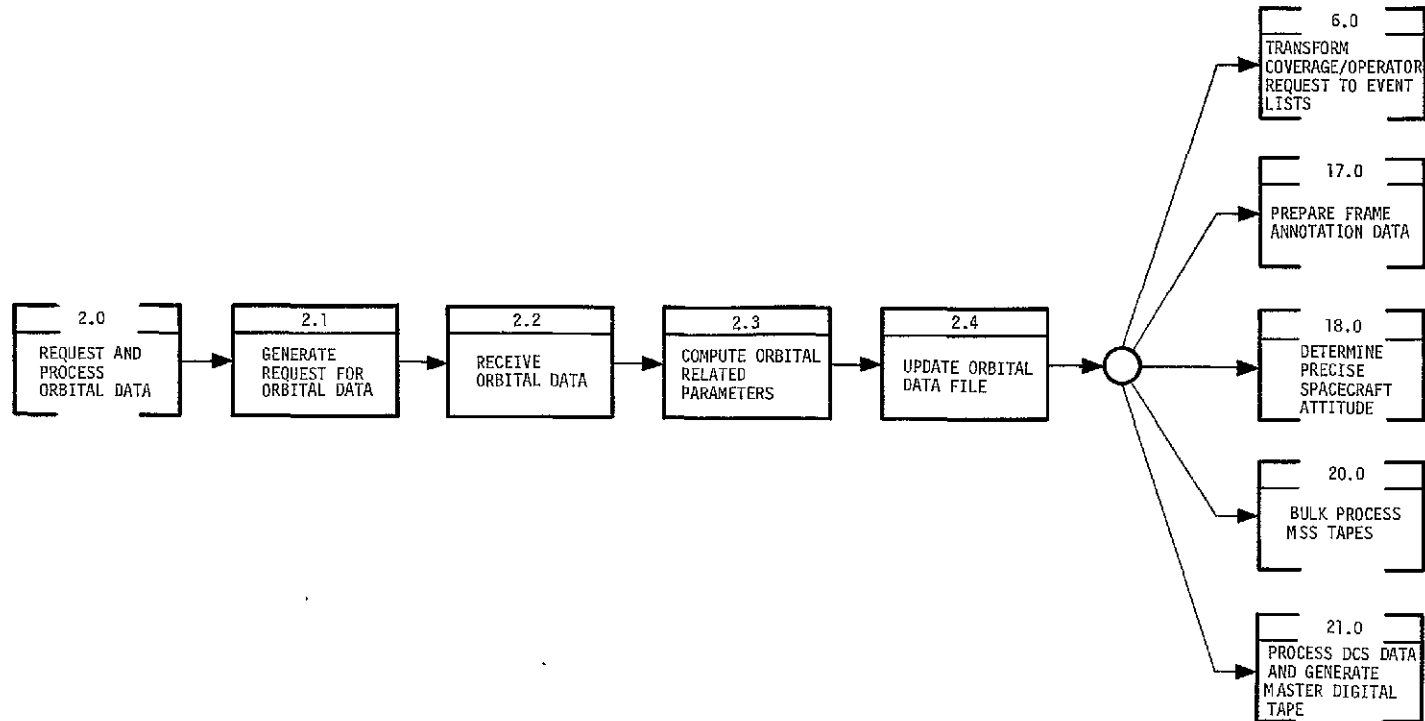
ORIGINATOR <i>M.P. Chase</i>		TRW SYSTEMS GROUP	
CHECKED		ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
GDHS <i>M.B. [signature]</i>		TOP FUNCTIONAL FLOW FOR GDHS	
CONFIGURATION MANAGEMENT <i>[signature]</i>		DWG. SIZE B	CODE IDENT. NO. 11982
RELEASE DATE 3-23-70		G001	

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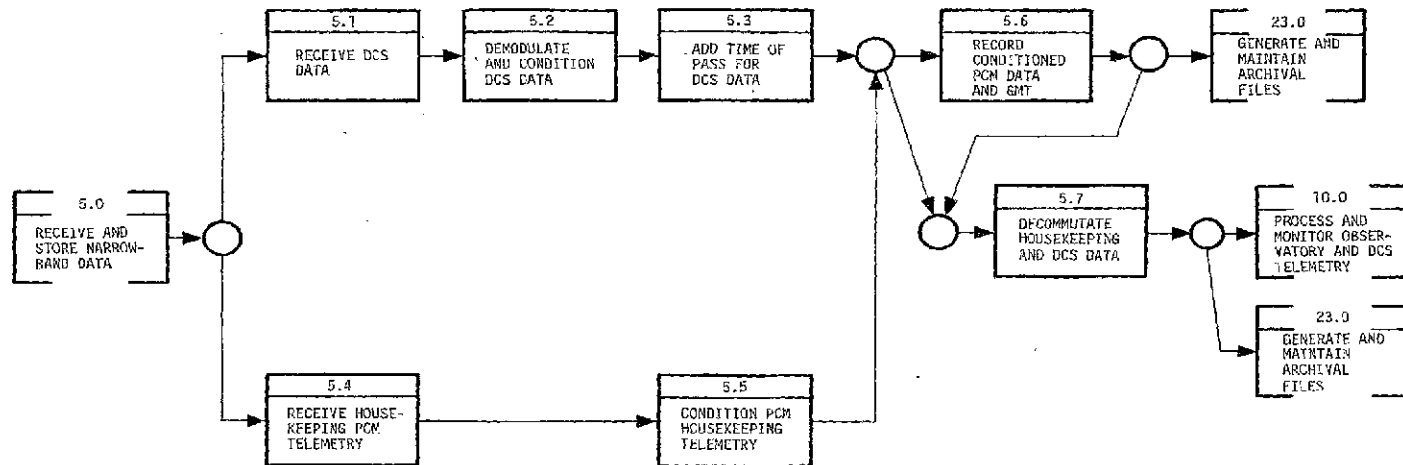
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
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GDHS		3.0 REQUEST AND PROCESS WEATHER DATA	
CONFIGURATION MANAGEMENT			
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B	11982		
RELEASE DATE		SHEET	

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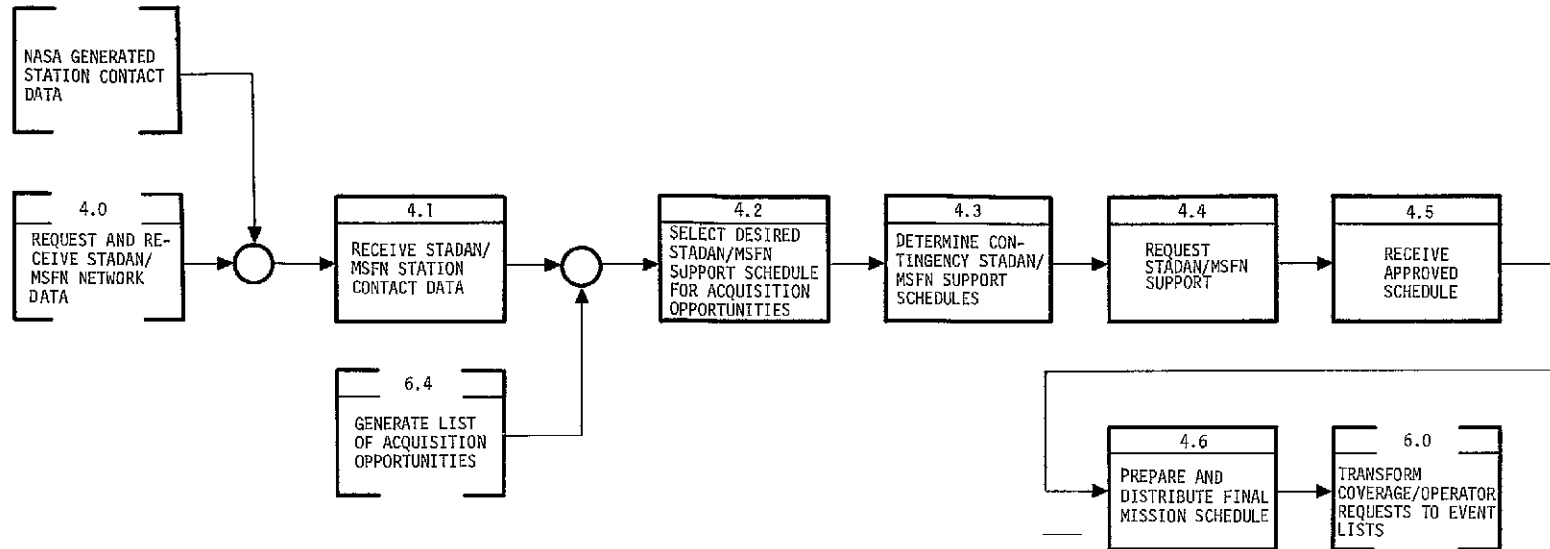
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
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GDHS		2.0 REQUEST AND PROCESS ORBITAL DATA	
CONFIGURATION MANAGEMENT			
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RELEASE DATE		SHEET	

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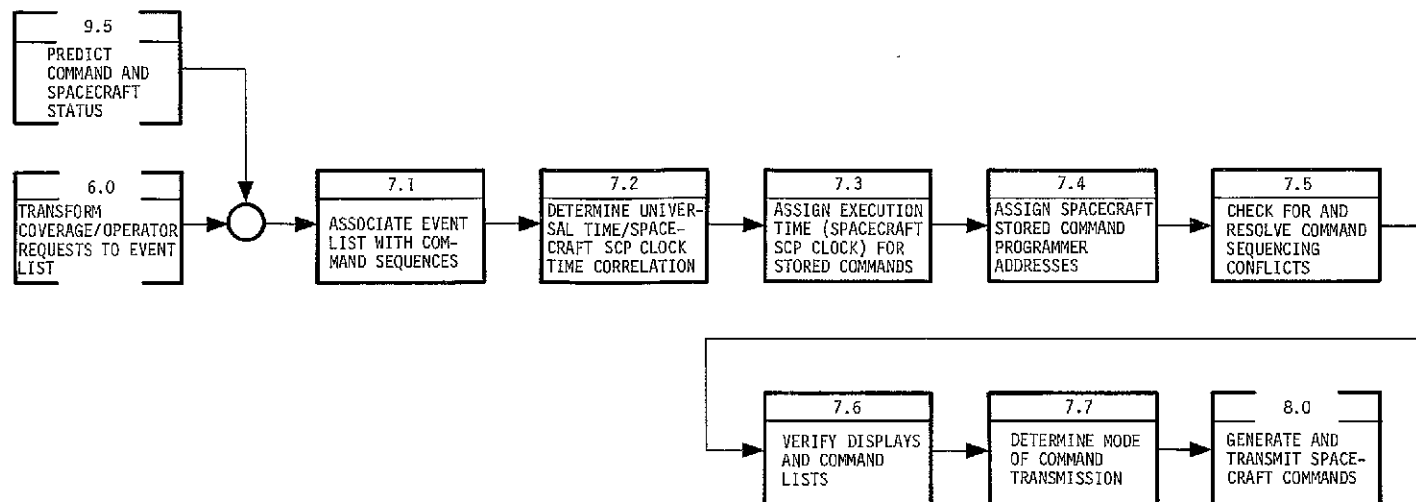
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
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GDHS			
CONFIGURATION MANAGEMENT		5.0 RECEIVE AND STORE NARROWBAND DATA	
DWG. SIZE	B		
CODE IDENT. NO.	11982	6006	
RELEASE DATE		SHEET	

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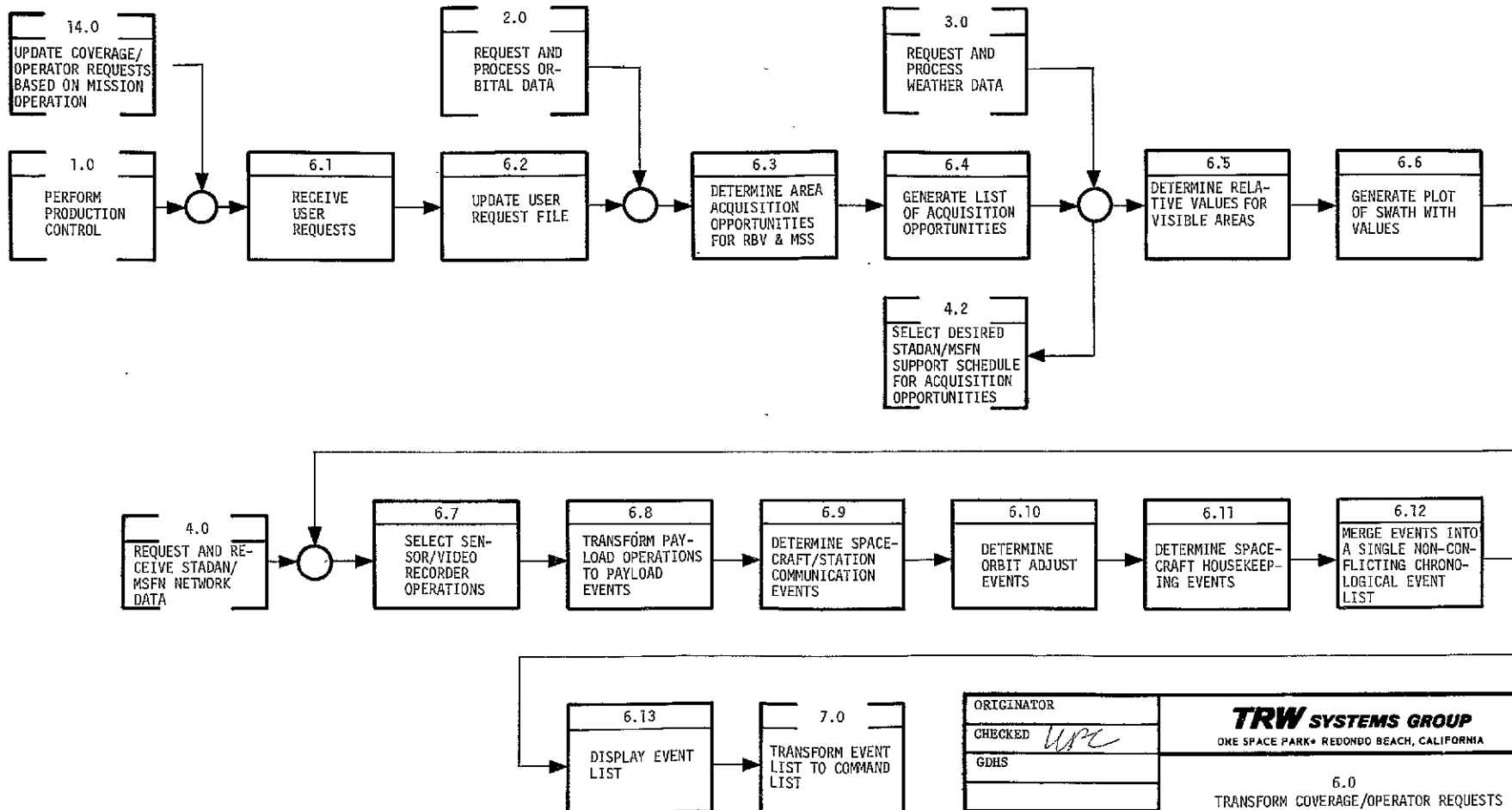
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDWOOD BEACH, CALIFORNIA	
CHECKED <i>WZ</i>			
GDHS			
CONFIGURATION MANAGEMENT		4.0 REQUEST AND RECEIVE STADAN/MSFN NETWORK DATA	
DWG. SIZE B	CODE IDENT. NO. 11982	G005	
RELEASE DATE		SHEET	

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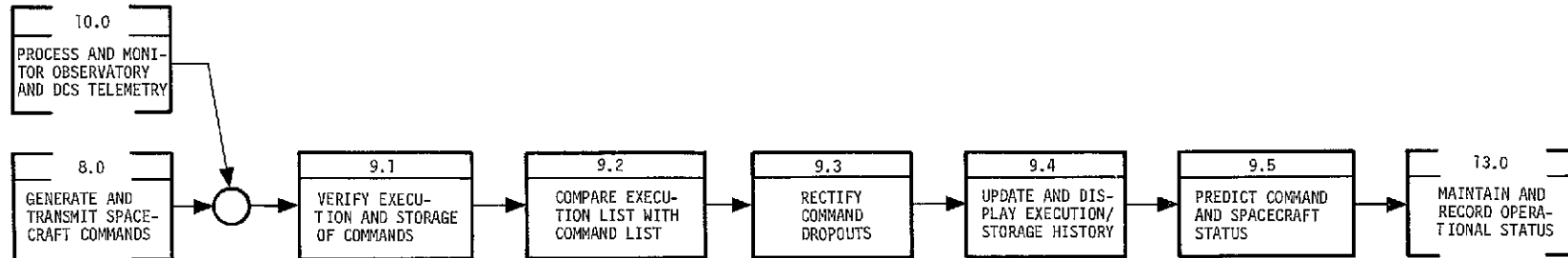
ORIGINATOR	TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA 7.0 TRANSFORM EVENT LIST TO COMMAND LIST		
CHECKED <i>WJPC</i>			
GDHS			
CONFIGURATION MANAGEMENT			
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RELEASE DATE		SHEET	

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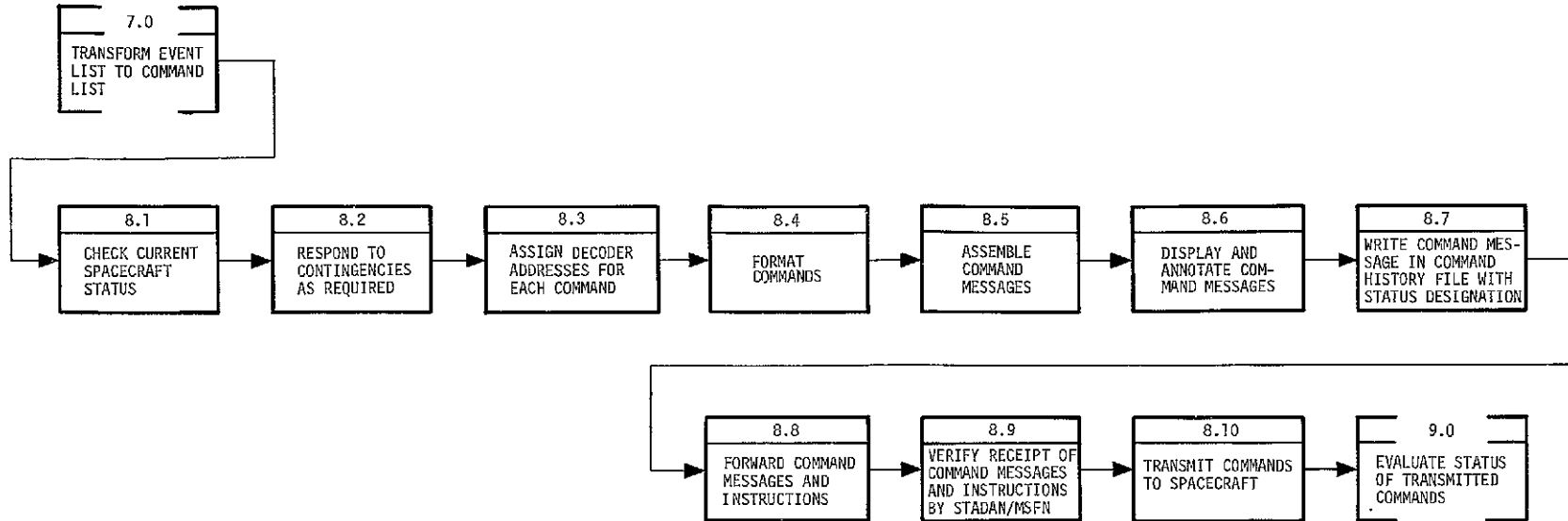
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED <i>WPC</i>			
GDHS		6.0 TRANSFORM COVERAGE/OPERATOR REQUESTS TO EVENT LIST	
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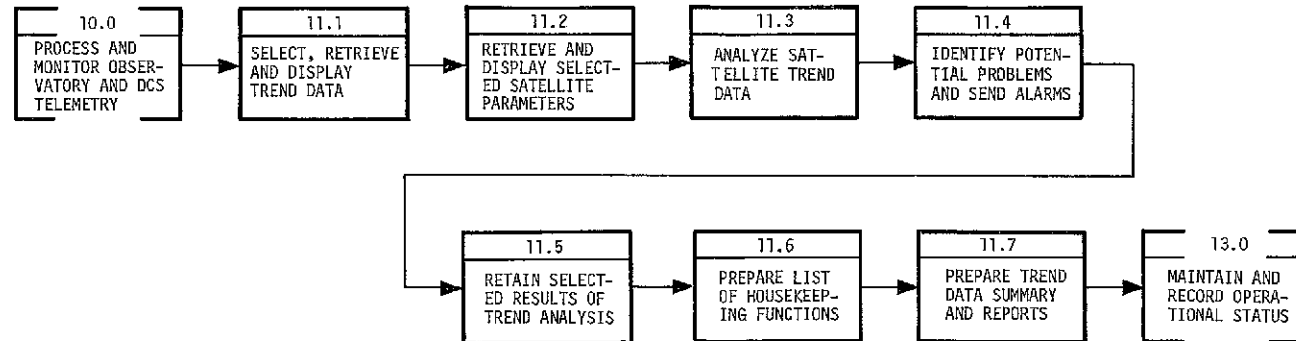
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED <i>WRC</i>			
GDHS			
CONFIGURATION MANAGEMENT		9.0 EVALUATE STATUS OF TRANSMITTED COMMANDS	
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		6010	
RELEASE DATE		SHEET	

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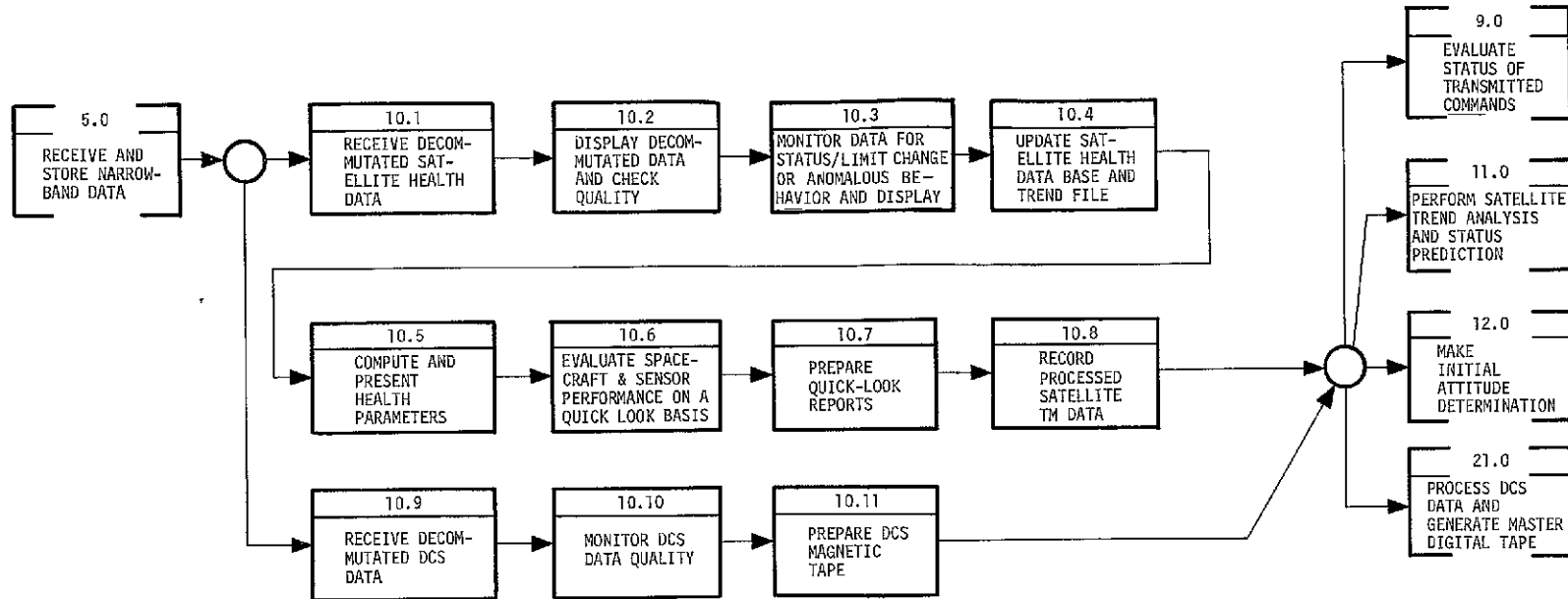
ORIGINATOR	TRW SYSTEMS GROUP		
CHECKED <i>W. J. C.</i>	ONE SPACE PARK • REDONDO BEACH, CALIFORNIA		
GDHS	8.0 GENERATE AND TRANSMIT SPACECRAFT COMMANDS		
CONFIGURATION MANAGEMENT	DWG. SIZE B	CODE IDENT. NO. 11982	G009
RELEASE DATE	SHEET		

REVISIONS			
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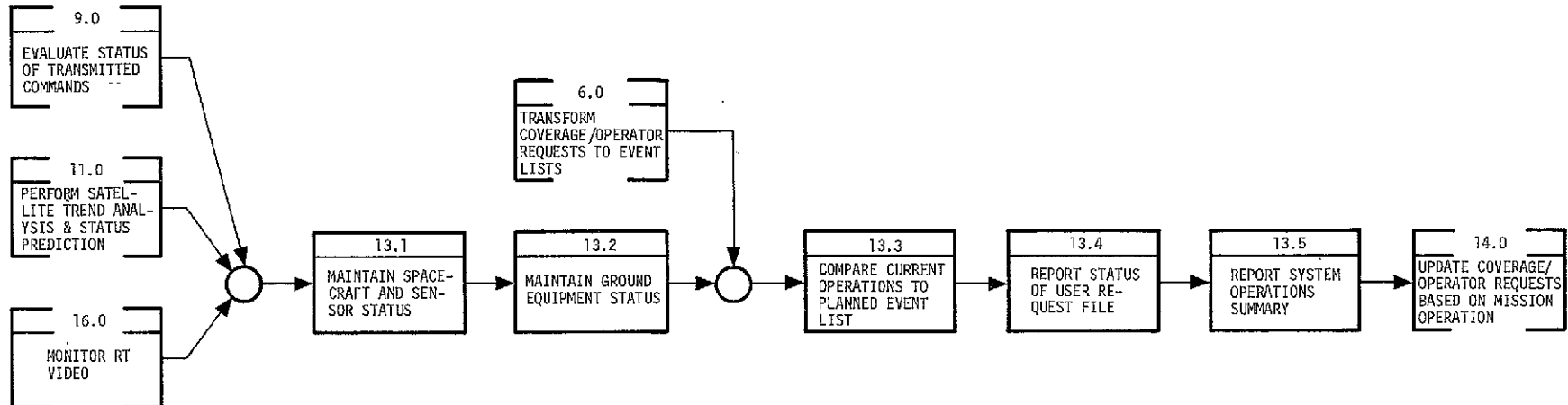
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED <i>Wape</i>			
GDHS			
CONFIGURATION MANAGEMENT		11.0 PERFORM SATELLITE TREND ANALYSIS AND STATUS PREDICTION	
DWG. SIZE	B	CODE IDENT NO.	6012
RELEASE DATE		SHEET	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED	<i>WPC</i>		
GDHS			
CONFIGURATION MANAGEMENT		10.0 PROCESS AND MONITOR OBSERVATORY AND DCS TELEMETRY	
DWG. SIZE B	CODE IDENT. NO 11982	G011	
RELEASE DATE		SHEET	

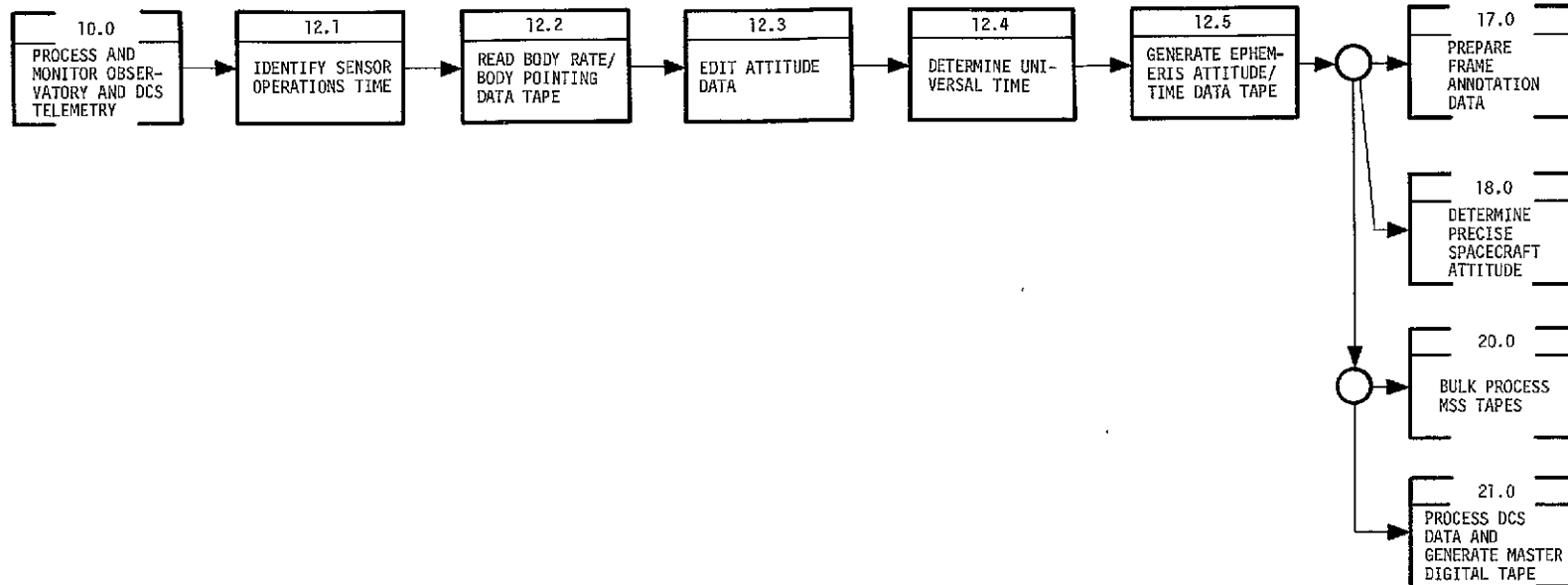
REVISIONS			
ZONE	LTR	DESCRIPTION	DATE APPROVED



ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED	<i>WRC</i>		
GDRS			
CONFIGURATION MANAGEMENT		13.0 MAINTAIN AND RECORD OPERATIONAL STATUS	
		DWG. SIZE	CODE IDENT. NO.
		B	11982
RELEASE DATE		SHEET	

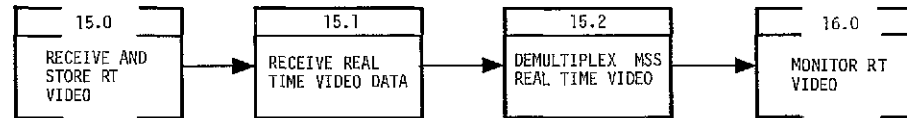
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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED <i>WPC</i>			
GDHS		12.0 MAKE INITIAL ATTITUDE DETERMINATION	
CONFIGURATION MANAGEMENT			
DWG. SIZE B	CODE IDENT. NO. 11982	6013	
RELEASE DATE		SHEET	

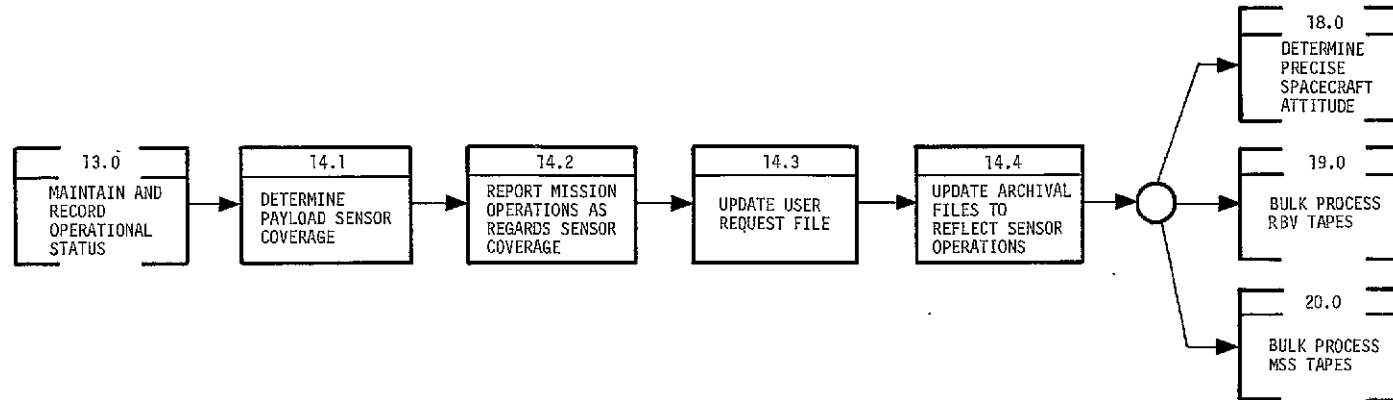
REVISIONS			
ZONE	LTR	DESCRIPTION	DATE



ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
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GDHS			
CONFIGURATION MANAGEMENT		15.0 RECEIVE AND STORE RT VIDEO	
DWG. SIZE	B	CODE IDENT NO.	11982
RELEASE DATE		SHEET	

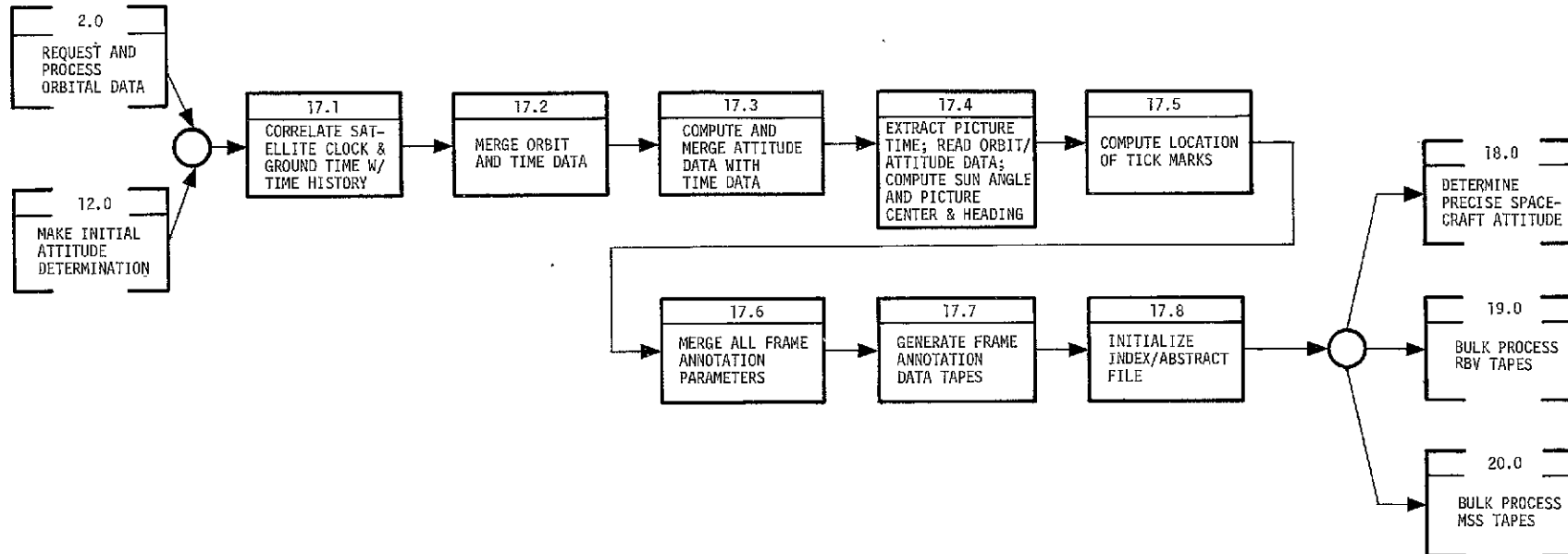
G016

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ZONE	LTR	DESCRIPTION	DATE



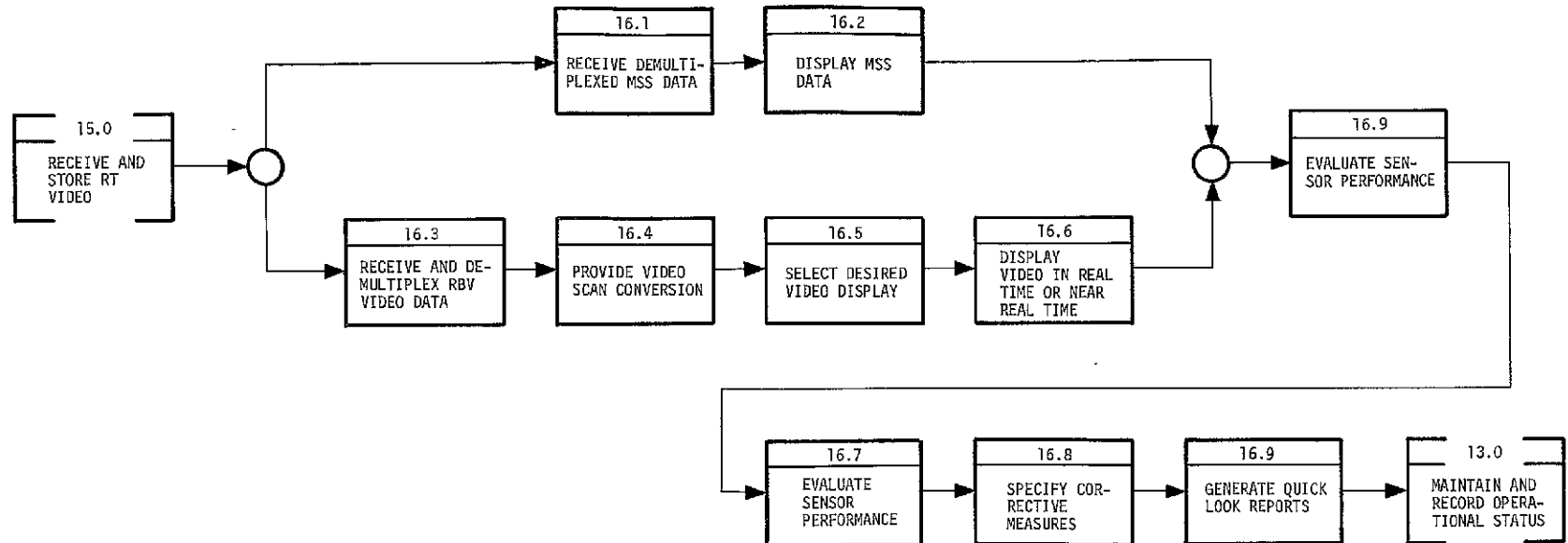
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED	<i>WPC</i>		
GDHS		14.0 UPDATE COVERAGE/OPERATOR REQUESTS BASED ON MISSION OPERATION	
CONFIGURATION MANAGEMENT			
DWG. SIZE	CODE IDENT. NO.	G015	
B	11982		
RELEASE DATE		SHEET	

REVISIONS					
ZONE	LTR	DESCRIPTION		DATE	APPROVED



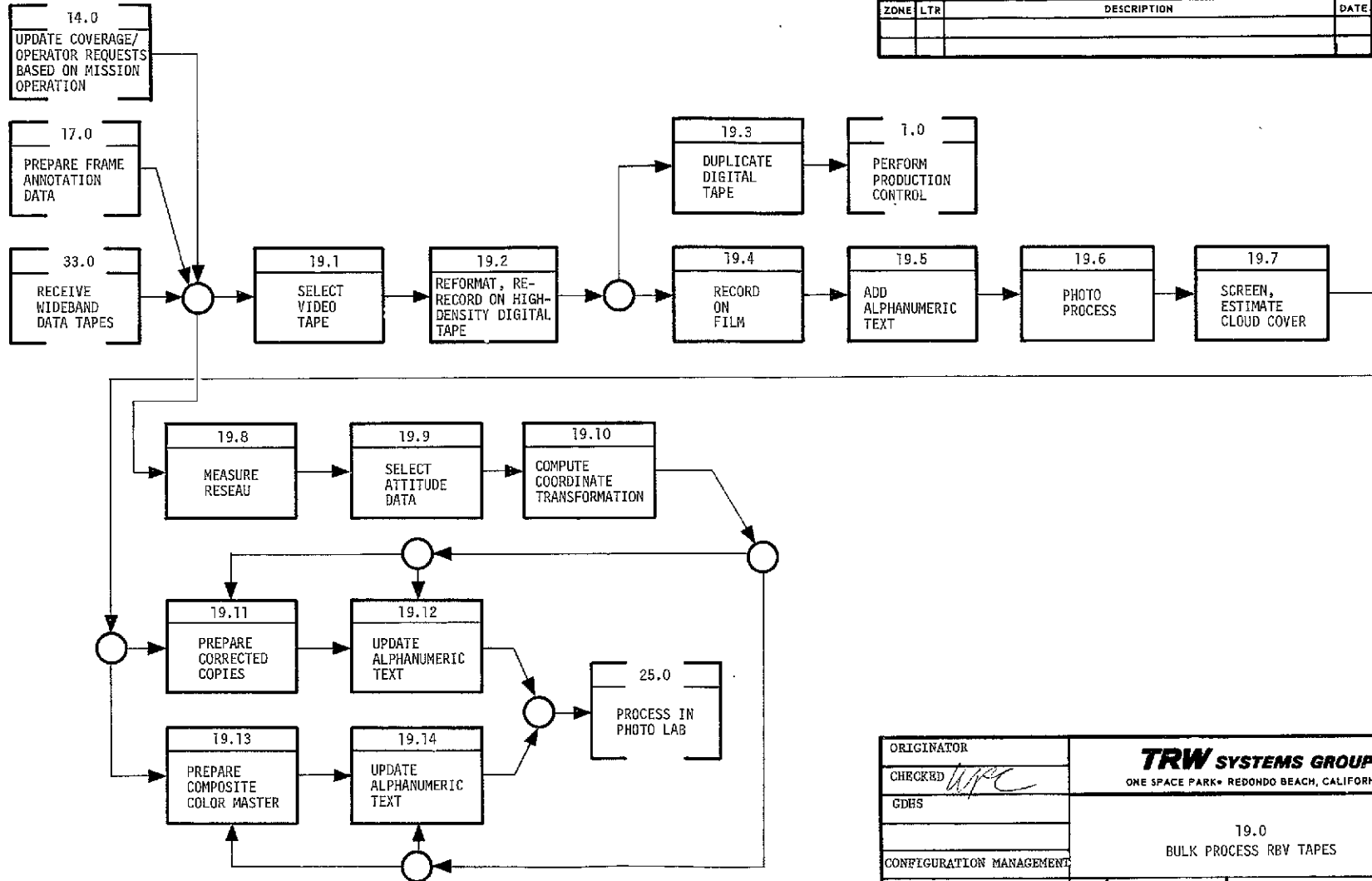
ORIGINATOR D. C. BURDITT (IBM)		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED <i>[Signature]</i>			
GDHS		17.0 PREPARE FRAME ANNOTATION DATA	
CONFIGURATION MANAGEMENT			
		DWG. SIZE B	CODE IDENT NO. 11982
		G018	
RELEASE DATE		SHEET	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



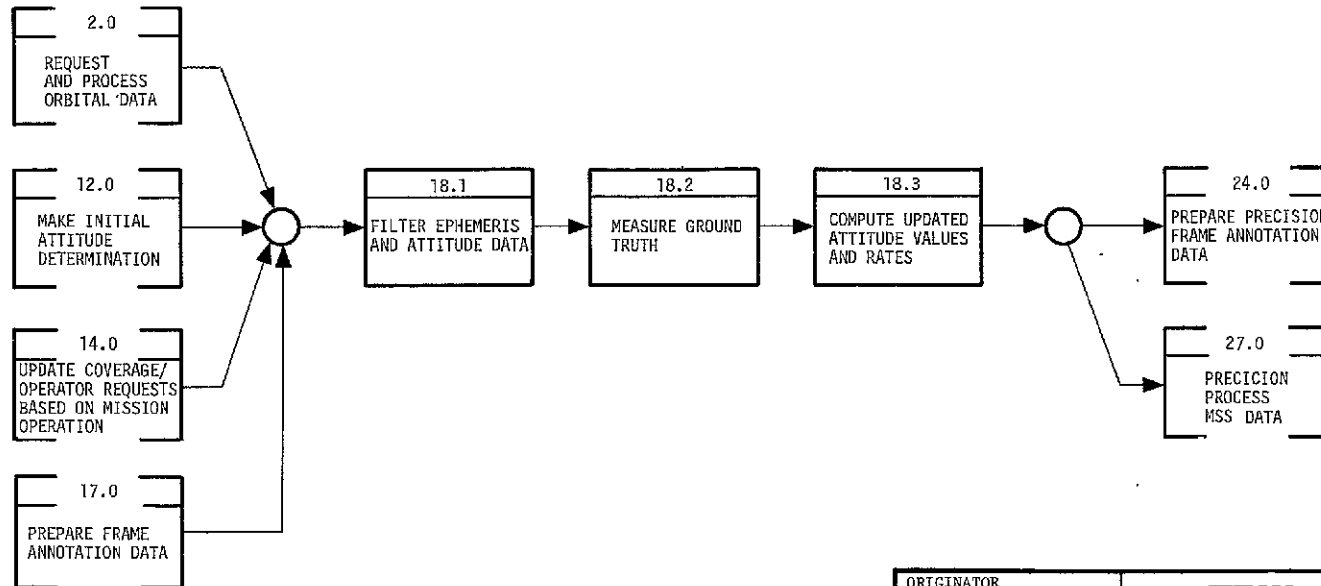
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED	<i>WPC</i>		
GDHS			
CONFIGURATION MANAGEMENT			
		16.0 MONITOR RT VIDEO	
DWG. SIZE B	CODE IDENT. NO. 11982	G017	
RELEASE DATE		SHEET	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



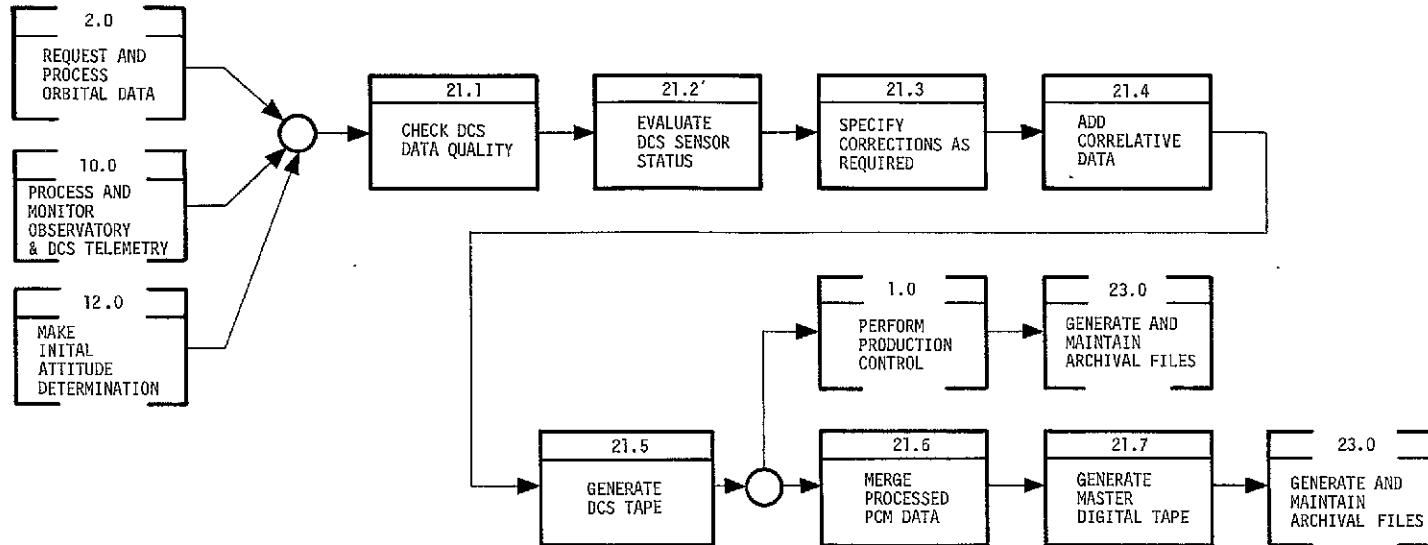
ORIGINATOR	TRW SYSTEMS GROUP		
CHECKED <i>WPC</i>	ONE SPACE PARK • REDONDO BEACH, CALIFORNIA		
GDES	19.0 BULK PROCESS RBV TAPES		
CONFIGURATION MANAGEMENT	DWG. SIZE B	CODE IDENT NO. 11982	G020
RELEASE DATE	SHEET		

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE

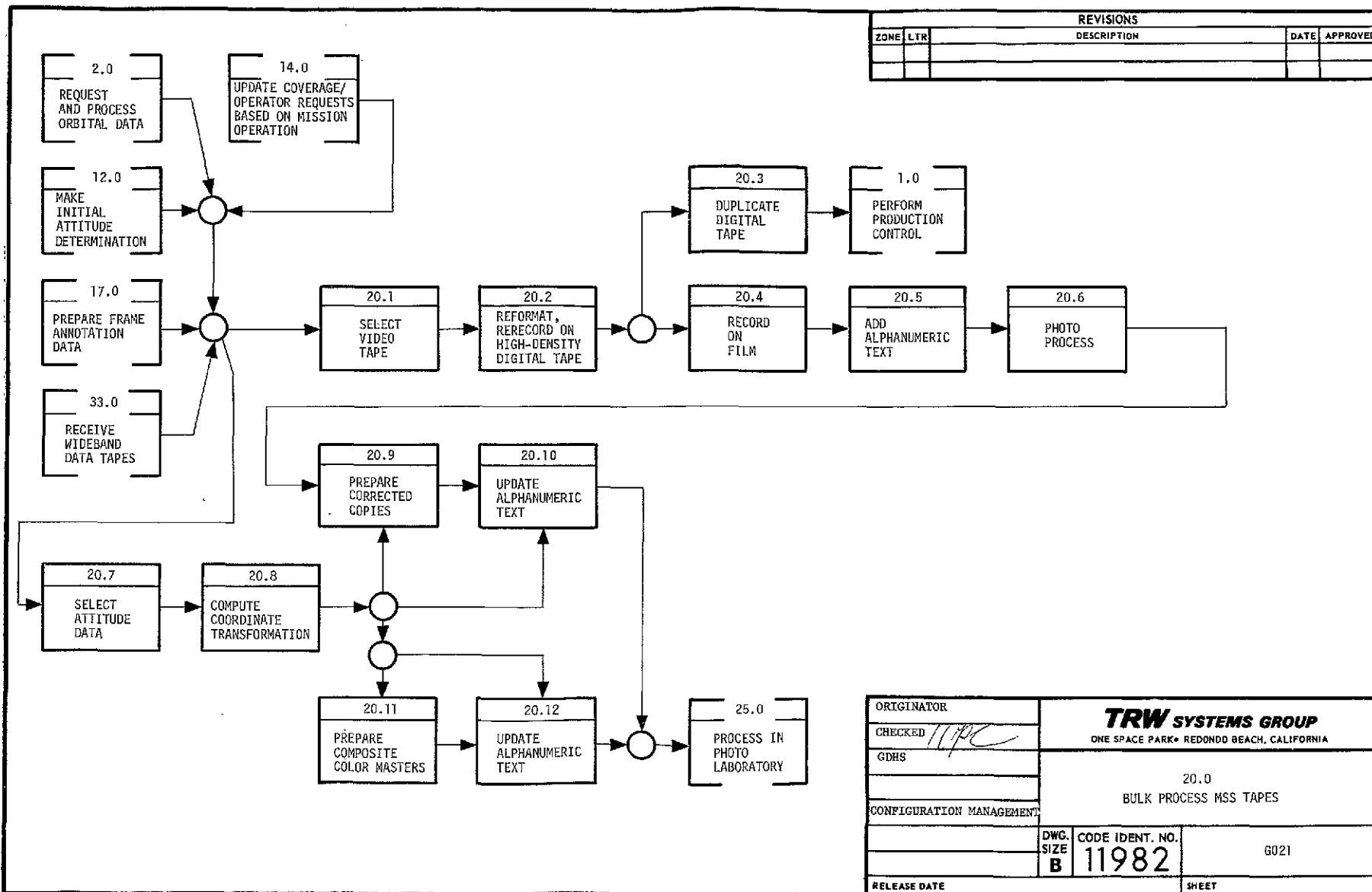


ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDDING BEACH, CALIFORNIA	
CHECKED <i>[Signature]</i>			
GDHS		18.0 DETERMINE PRECISE SPACECRAFT ATTITUDE	
CONFIGURATION MANAGEMENT			
DWG. SIZE B	CODE IDENT NO. 11982	6019	
RELEASE DATE		SHEET	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED <i>WPC</i>			
GDHS		21.0 PROCESS DCS DATA AND GENERATE MASTER DIGITAL TAPE	
CONFIGURATION MANAGEMENT			
DWG. SIZE B	CODE IDENT NO. 11982	G022	
RELEASE DATE		SHEET	



ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED <i>MP</i>			
GDHS		20.0 BULK PROCESS MSS TAPES	
CONFIGURATION MANAGEMENT			
DWG. SIZE B	CODE IDENT. NO. 11982	6021	
RELEASE DATE		SHEET	

5.0
RECEIVE AND
STORE NARROW-
BAND DATA

25.0
PROCESS IN
PHOTO
LABORATORY

21.0
PROCESS DCS DATA
AND GENERATE
MASTER DIGITAL
TAPE

22.0
PROCESS USER
INPUTS TO
ARCHIVAL FILES

23.1
LOG IN AND
IDENTIFY DATA

23.2
STORE DATA

23.3
SERVICE DATA
REQUEST

23.4
SEARCH FILE
FOR DATA

23.5
LOG OUT LABEL
AND TRANSMIT
DATA

23.6
MAINTAIN
ASSOCIATED
DATA RECORD

23.7
UPDATE
ASSOCIATED
DATA

1.0
PERFORM
PRODUCTION
CONTROL

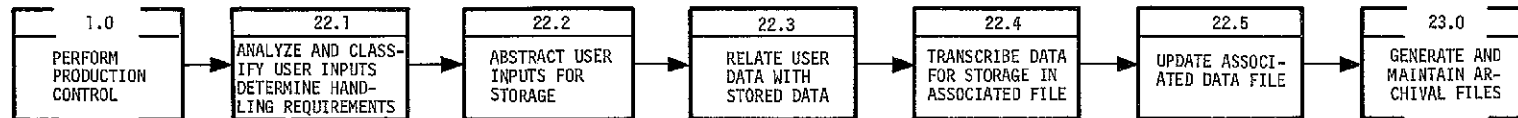
24.0
PREPARE
PRECISION FRAME
ANNOTATION DATA

27.0
PRECISION
PROCESS
MSS DATA

REVISIONS				
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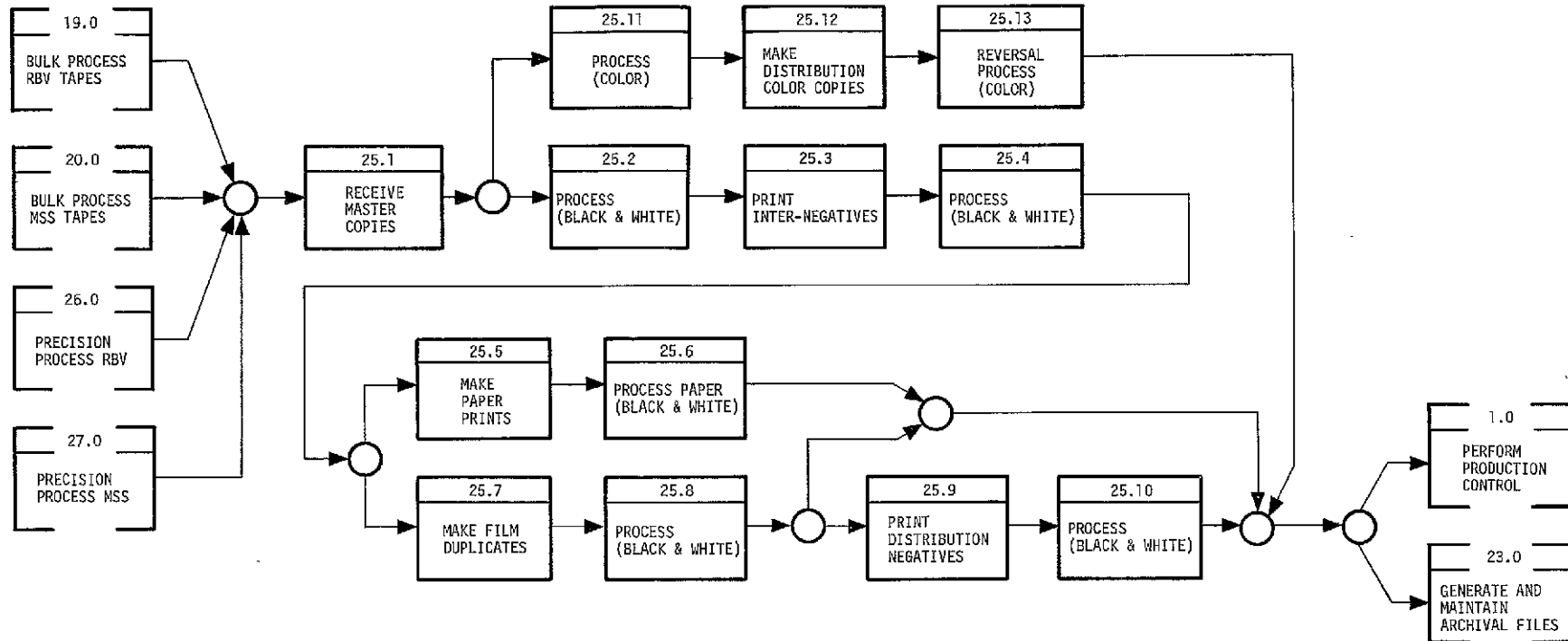
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED	<i>LLP</i>		
GDHS			
CONFIGURATION MANAGEMENT		23.0 GENERATE AND MAINTAIN ARCHIVAL FILES	
DWG. SIZE	B	CODE IDENT. NO.	6024
11982			
RELEASE DATE		SHEET	

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE APPROVED



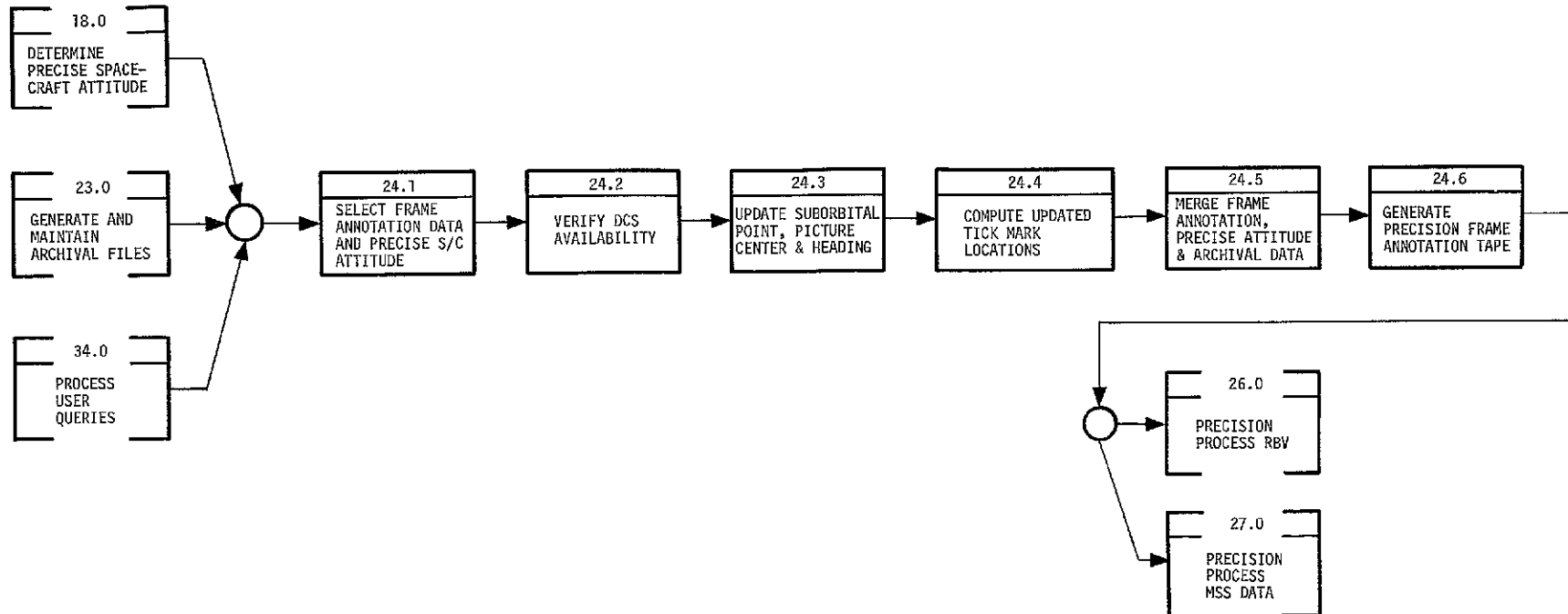
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED	<i>UPC</i>		
GDHS		22.0 PROCESS USER INPUTS TO ARCHIVAL FILE	
CONFIGURATION MANAGEMENT			
	DWG. SIZE B	CODE IDENT. NO. 11982	G023
RELEASE DATE		SHEET	

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE APPROVED



ORIGINATOR	TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED <i>[Signature]</i>		
GDHS	25.0 PROCESS IN PHOTO LABORATORY	
CONFIGURATION MANAGEMENT		
DWG. SIZE B	CODE IDENT. NO. 11982	G026
RELEASE DATE	SHEET	

REVISIONS				
ZONE	LTR	DESCRIPTION		DATE
				APPROVED



ORIGINATOR	TRW SYSTEMS GROUP ONE SPACE PARK • REDDING BEACH, CALIFORNIA		
CHECKED <i>[Signature]</i>			
GDHS	24.0 PREPARE PRECISION FRAME ANNOTATION DATA		
CONFIGURATION MANAGEMENT			
DWG. SIZE B	CODE IDENT. NO. 11982	6025	
RELEASE DATE	SHEET		

18.0
DETERMINE
PRECISE
SPACECRAFT
ATTITUDE

23.0
GENERATE AND
MAINTAIN
ARCHIVAL
FILES

24.0
PREPARE PRE-
CISION FRAME
ANNOTATION
DATA

26.0
PRECISION
PROCESS RBV

27.1
CORRELATE MSS
WITH RBV AND
STORE ERROR
SIGNALS

27.2
COMPUTE IMPROVED
ATTITUDE DATA

27.3
COMPUTE
COORDINATE
TRANSFORMATION

27.4
PERFORM
GEOM
ROUTINE

27.5
PERFORM
SPECIAL
PROCESSING

27.6
DUPLICATE
DIGITAL
TAPE

1.0
PERFORM
PRODUCTION
CONTROL

27.7
RECORD
ON
FILM

27.8
ADD
ALPHANUMERIC
TEXT

27.9
PHOTO
PROCESS

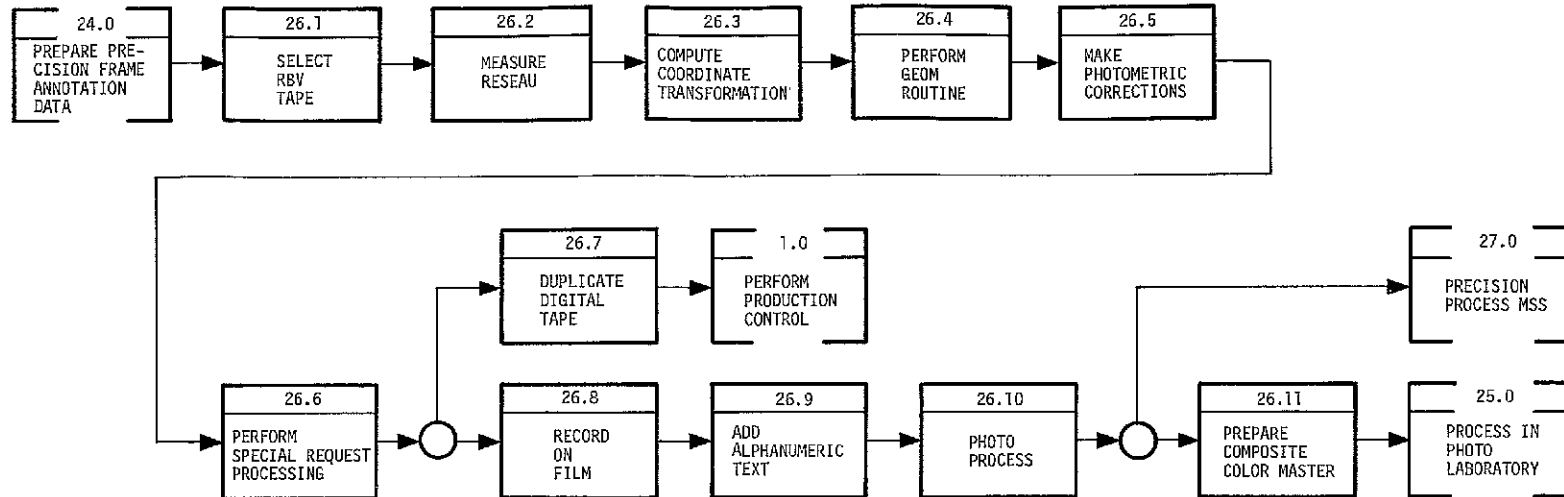
27.10
PREPARE
COMPOSITE
COLOR MASTERS

25.0
PROCESS IN
PHOTO
LABORATORY

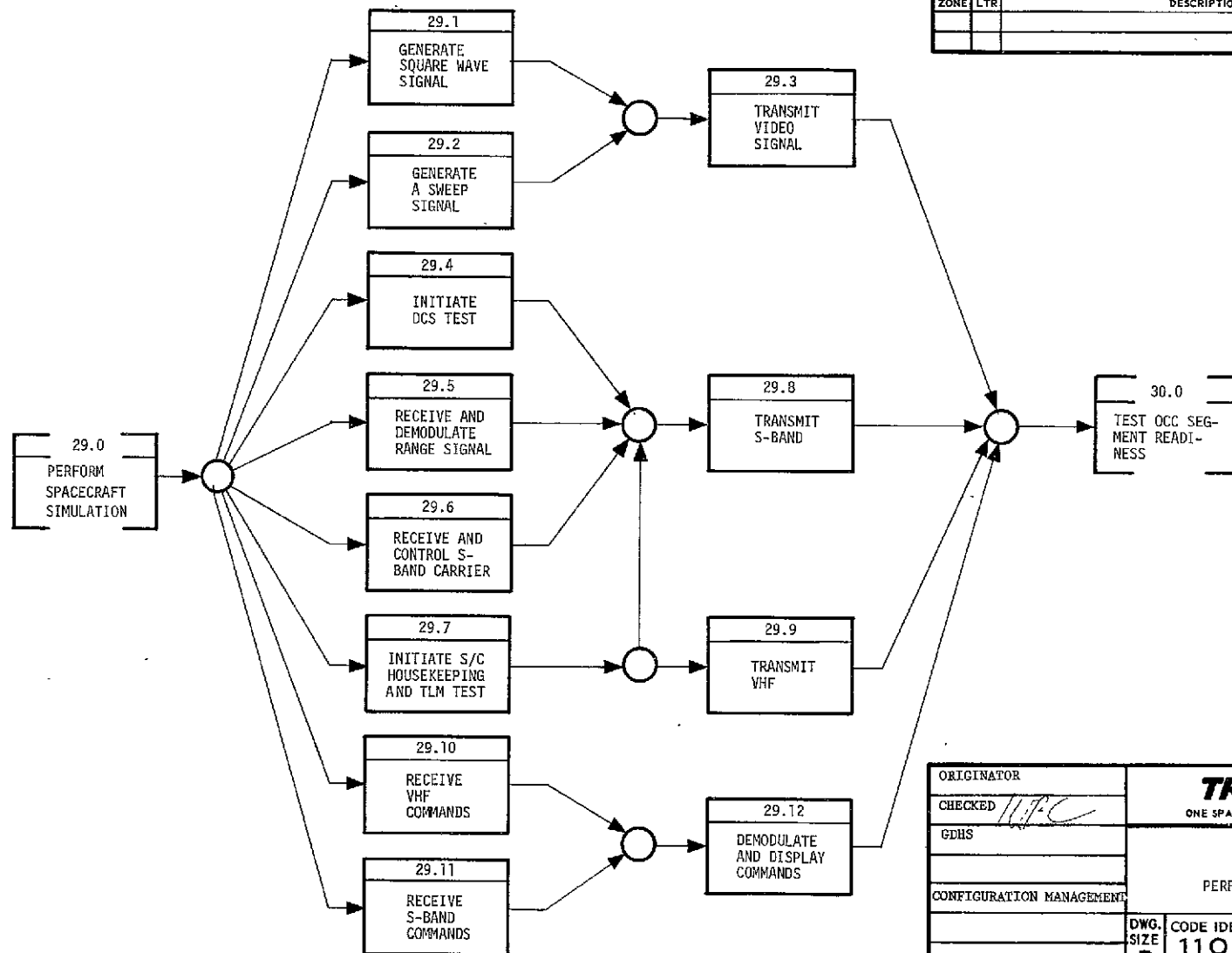
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ZONE	LTR	DESCRIPTION	DATE

ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDD BEACH, CALIFORNIA 27.0 PRECISION PROCESS MSS	
CHECKED	<i>WPC</i>		
GDHS			
CONFIGURATION MANAGEMENT			
DWG SIZE B	CODE IDENT. NO. 11982	6028	
RELEASE DATE		SHEET	

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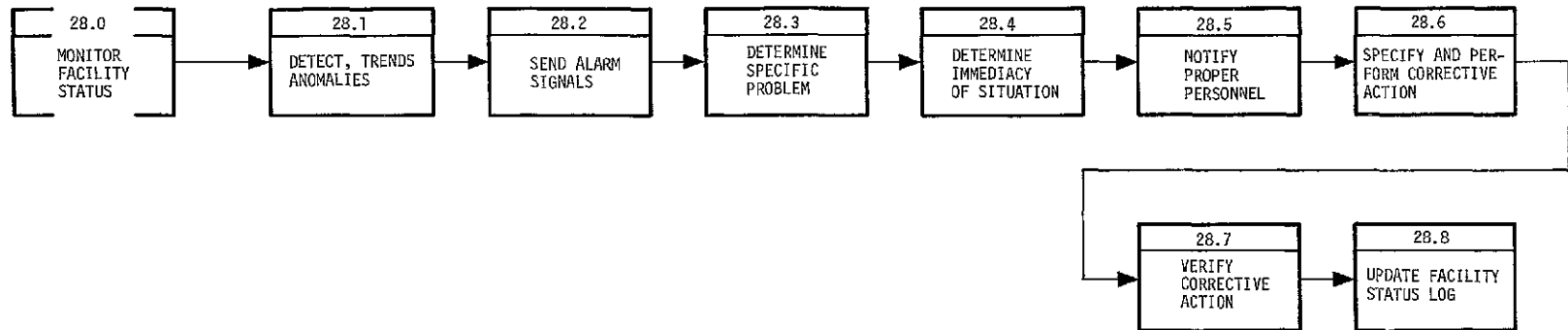
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED	<i>UPC</i>		
GDHS		26.0 PRECISION PROCESS RBV	
CONFIGURATION MANAGEMENT			
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RELEASE DATE		SHEET	



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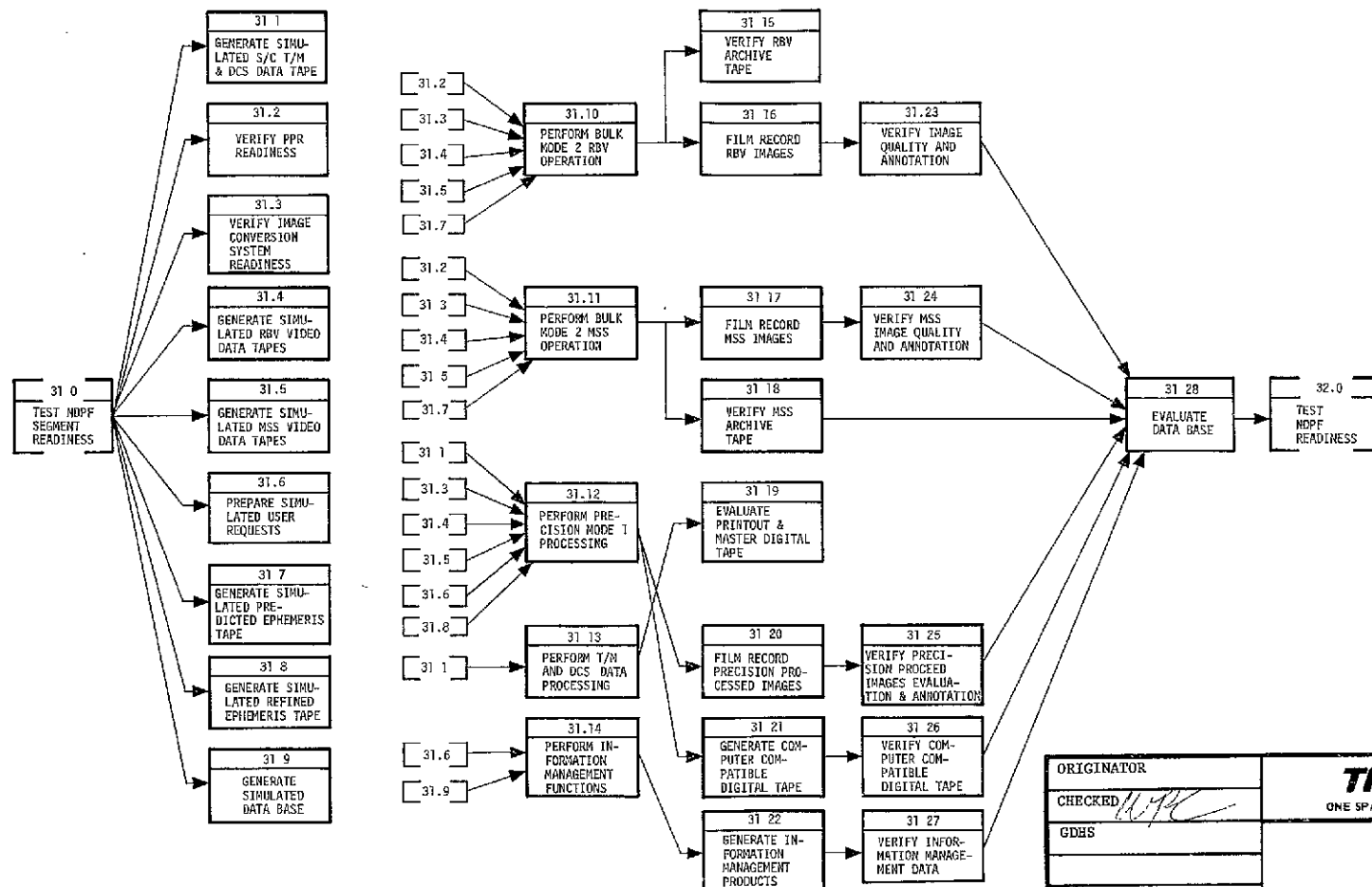
ORIGINATOR		TRW SYSTEMS GROUP	
CHECKED	<i>W.P.C.</i>	ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
GDHS		29.0	
CONFIGURATION MANAGEMENT		PERFORM SPACECRAFT SIMULATION	
DWG. SIZE	CODE IDENT. NO.	G030	
B	11982		
RELEASE DATE		SHEET	

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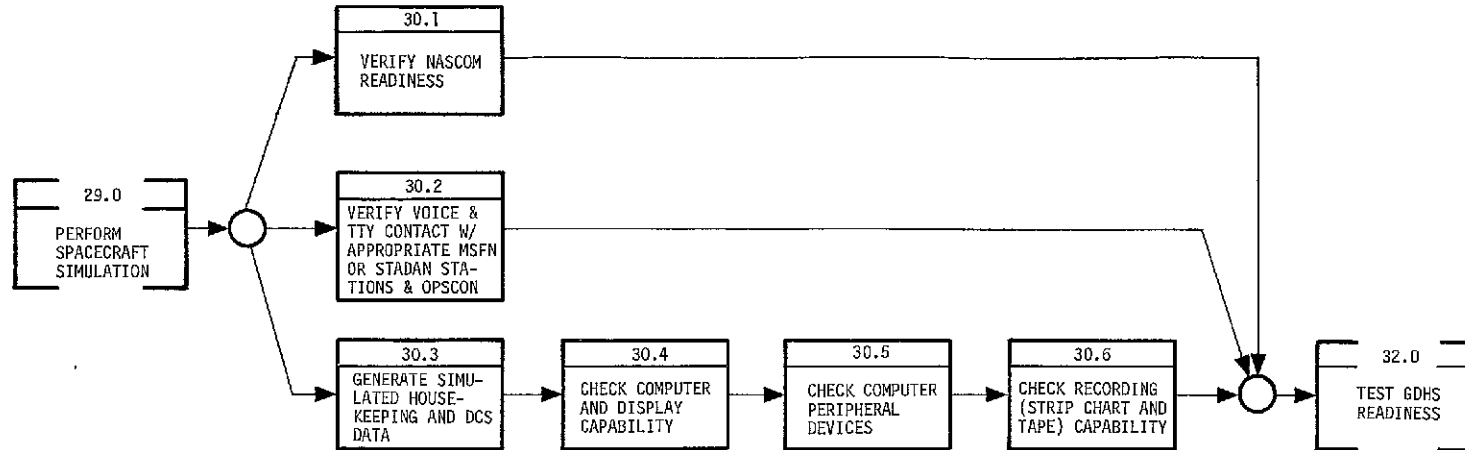
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CHECKED	<i>WPC</i>		
GDHS			
CONFIGURATION MANAGEMENT		28.0 MONITOR FACILITY STATUS	
DWG. SIZE	B	CODE IDENT. NO.	11982
RELEASE DATE		G029 SHEET	

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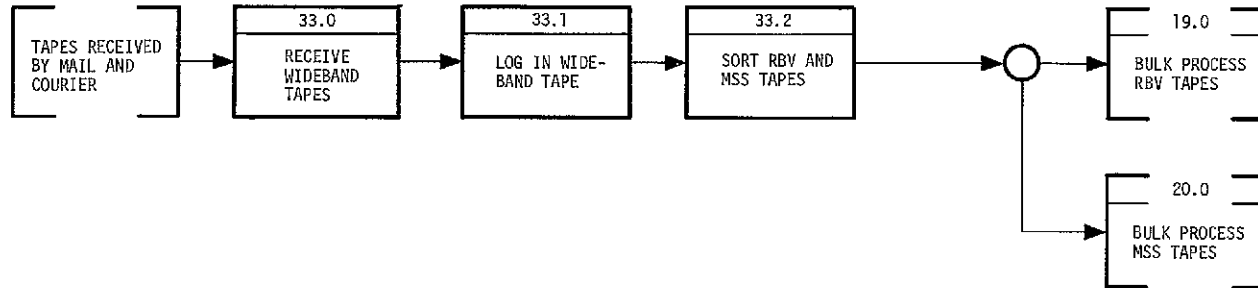
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CHECKED <i>WPK</i>			
GDHS		31.0 MDPF SEGMENT READINESS	
CONFIGURATION MANAGEMENT			
DWG SIZE B	CODE IDENT. NO. 11982	G032	
RELEASE DATE		SHEET	

REVISIONS				
ZONE	LTR	DESCRIPTION		DATE



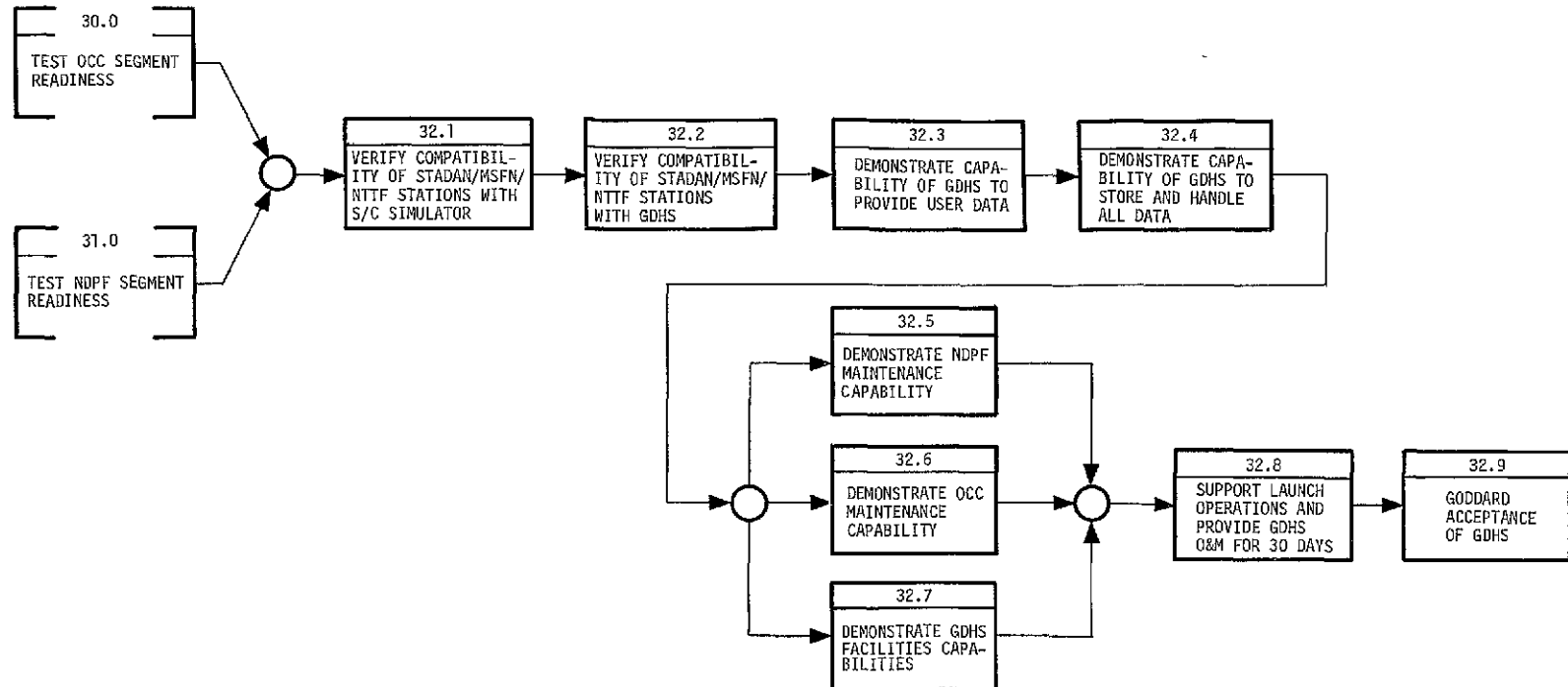
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED <i>16.7C</i>			
GDHS		30.0 TEST OCC SEGMENT READINESS	
CONFIGURATION MANAGEMENT			
DWG. SIZE B	CODE IDENT NO. 11982	6031	
RELEASE DATE		SHEET	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



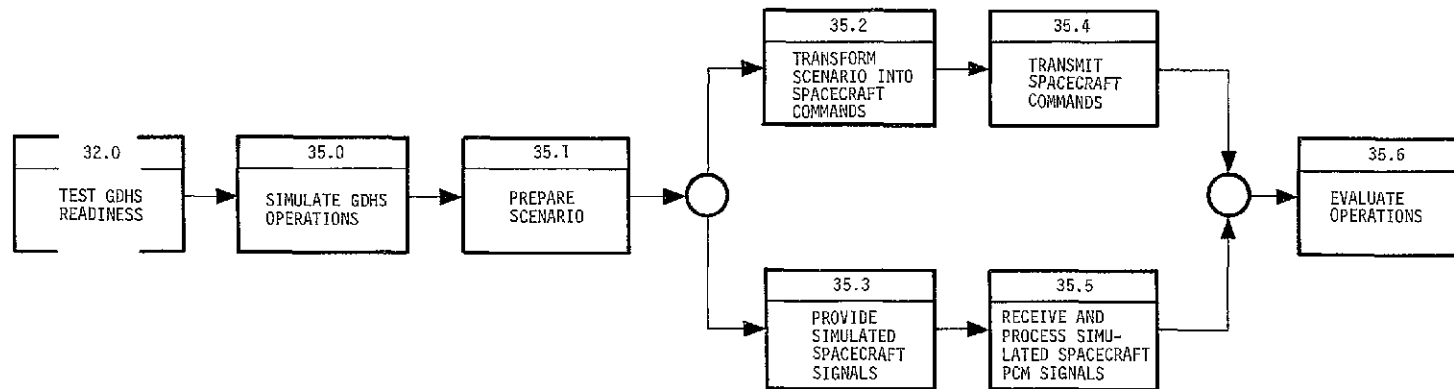
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED	<i>[Signature]</i>		
GDHS			
CONFIGURATION MANAGEMENT		33.0 RECEIVE WIDEBAND TAPES	
DWG. SIZE	CODE IDENT. NO.	6034	
B	11982		
RELEASE DATE		SHEET	

REVISIONS				
ZONE	LTR	DESCRIPTION		DATE



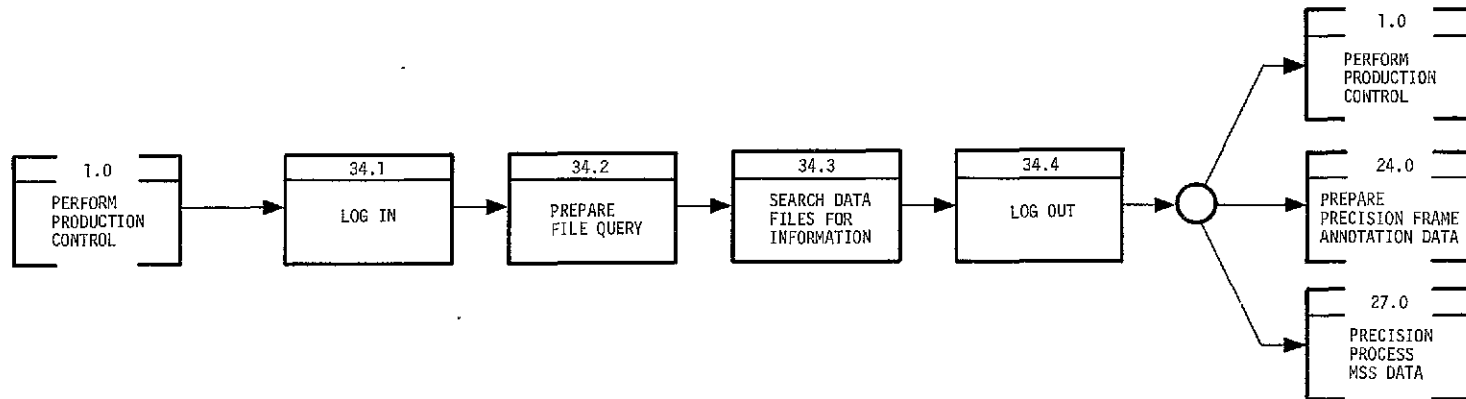
ORIGINATOR	TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA			
CHECKED <i>[Signature]</i>				
GDHS				
CONFIGURATION MANAGEMENT				
32.0 TEST GDHS READINESS		DWG. SIZE B	CODE IDENT NO. 11982	6033
RELEASE DATE		SHEET		

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



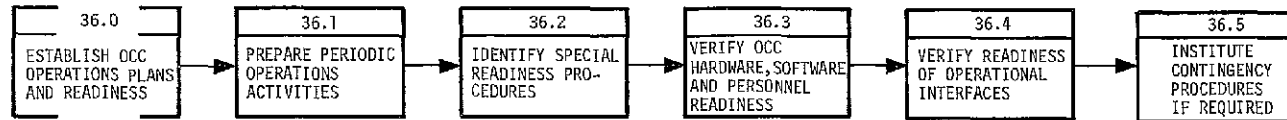
ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDDINGO BEACH, CALIFORNIA	
CHECKED	<i>[Signature]</i>		
GDHS		35.0 SIMULATE GDHS OPERATIONS	
CONFIGURATION MANAGEMENT			
DWG. SIZE	CODE IDENT NO.	G036	
B	11982		
RELEASE DATE		SHEET	

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE APPROVED



ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED <i>WTC</i>			
GDHS		34.0 PROCESS USER QUERIES	
CONFIGURATION MANAGEMENT			
DWG. SIZE B	CODE IDENT. NO. 11982	G035	
RELEASE DATE		SHEET	

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE APPROVED



ORIGINATOR		TRW SYSTEMS GROUP ONE SPACE PARK • REDONDO BEACH, CALIFORNIA	
CHECKED <i>6/7/85</i>			
GDHS			
CONFIGURATION MANAGEMENT		36.0 ESTABLISH OCC OPERATIONS PLANS AND READINESS	
DWG. SIZE B	CODE IDENT NO. 11982	6037	
RELEASE DATE		SHEET	

REQUIREMENTS ALLOCATION SHEETS

PURPOSE

The functional analysis for ERTS Operations Control and Data Processing has two main purposes: (1) It furnishes the operational requirements baseline for use in deciding how the hardware, software and personnel elements of the Ground Data Handling System will be employed in the accomplishment of each functional requirement; and, (2) It provides a comprehensive description of the system performance requirements which furnishes a common language for communicating at all levels of customer and contractor management. Consequently, the ERTS Operations Control and Data Processing functional analysis is to be used in the following specific ways to:

- a) Support the GDHS system design process by:
 - 1. Furnishing a common description of the OCC and NDPF operations requirements baseline for defining and assigning the performance requirements for hardware, software and personnel end item design in order to achieve their integration into an effective GDHS design and to prevent each subsystem or end item design group independently inventing their own functional requirements assumptions.
 - 2. Providing a common record of judgmental factors employed in tradeoff considerations involved in deriving the ultimate system configuration.
- b) Support the GDHS project management during the system development and test by:
 - 1. Furnishing an easily understood functional description of the system.
 - 2. Providing a necessary document for evaluating the total system impact of changes in system performance requirements and end item designs as development progresses.

3. Furnishing a continuous up-to-date record of the allocation of performance/design requirements to hardware, software, and personnel for system management planning and assessment.
4. Exposing performance requirements interfaces for which the functional design of hardware, software and personnel end items for integration into the GDHS is unresolved.
5. Providing a total system functional description as a basis for deriving system integration, installation and test requirements and operational procedures to verify and demonstrate GDHS operational readiness.

The results of the functional analysis for ERTS Operations Control and Data Processing are set forth in two volumes. Volume 1 contains the top functional flow for the Ground Data Handling System (GDHS) and subordinate flows for each function identified on the top functional flow diagram. Volume 2 contains requirements allocation sheets for each of the functions identified on the top functional flow diagram.

DEFINITIONS

- Hardware: Non-programmable hard-wired equipment not requiring manual intervention except for such functions as load, unload, maintain, preset, etc.
- Software: Computer programs in machine or higher level languages--software designation implies the availability of general purpose computers and standard peripheral equipment such as printers, tape units, memories, etc.
- Manual: Human intervention requiring decision processes, reasoning, problem-solving, etc., and excluding such functions as load, unload, preset, maintain, etc.

A and B: Alternate ways of accomplishing the functional tasks as listed.

(): Enclosed applicable paragraph number(s) in S-701-P-3, "Design Study Specifications for the Earth Resources Technology Satellite ERTS -A and -B," October 1969, NASA Goddard Space Flight Center.

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.	
		NO. 10	TITLE 700000 PRODUCTION CONTROL	A		B		A	B	A	B	A	B		A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC	SOFTWARE SPEC		PERSONNEL SPEC
		GSFC SPEC. PAR NO. 714312	HARDWARE SOFTWARE	HARDWARE SOFTWARE	HARDWARE SOFTWARE	HARDWARE SOFTWARE	A																		
FUNCTION NUMBER	FUNCTION REQUIREMENTS																								
11	LOG IN DATA AND USER JUMPS AND REQUESTS LOG IN SUPPLEMENTAL DATA			X				DATA CLERK		MAIL ROOM PROCEDURES			CLERICAL ROUTINE		NONE	NONE		X					3 4 2 k)	IBM	
12	DETERMINE INITIAL ACTIONS ASSIGN APPROPRIATE PERSONNEL OBTAIN JOB CONTROL NUMBER FROM PRODUCTION CONTROL			X				OPERATIONS ANALYST/ MANAGER		WORK ASSIGNMENT PROCEDURES			CLERICAL ROUTINE		NONE	NONE		X					3 4 2 c)	IBM	
13	INITIATE COVERAGE REQUEST			X				OPERATIONS MANAGER		COVERAGE ADJUST PROCEDURES			VARIABLE PROCEDURE		NONE	NONE		X					3 4 2 c)	IBM	
14	NOTIFY USER OF EXPECTED DELAY			X				OPERATIONS MANAGER		USER LIAISON PROCEDURES			VARIABLE PROCEDURE		NONE	NONE		X					3 4 2 c)	IBM	
15	MONITOR INDEX PERFORMANCE			X				OPERATIONS ANALYST		OPERATIONS CONTROL PRODUCTION CONTROL PROCEDURES			OPEN END DECISION MAKING		NONE	NONE		X					3 4 2 c1	IBM	
16	DETERMINE FOLLOWUP ACTIONS REVIEW INCOMPLETE RESULTS ASSIGN APPROPRIATE PERSONNEL			X				OPERATIONS ANALYST/ MANAGER		WORK FLOW PROCEDURES AND ALTERNATIVES			OPEN END DECISION MAKING		NONE	NONE		X					3 4 2 c)	IBM	
17	REVIEW FINAL PRODUCTS REVIEW RULK AND SPECIAL PRODUCTS DETERMINE QUALITY AND COMPLETENESS INITIATE CORRECTIVE ACTIONS WHEN NECESSARY			X				OPERATIONS ANALYST/ MANAGER		PRODUCTS CONTROL PROCEDURES AND SPECIFICATIONS			OPEN END DECISION MAKING		NONE	NONE		X					3 4 2 c)	IBM	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.
		NO. 10		A		B		A	B	A	B	A	B	A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC	SOFTWARE SPEC.	PERSONNEL SPEC.	
		TITLE PERFORM PRODUCTION CONTROL (CONTINUE)		HARDWARE	SOFTWARE	HARDWARE	SOFTWARE																	
		GSFC. SPEC. PAR. NO. 210.3.1.2		MANUAL	MANUAL	MANUAL	MANUAL																	
FUNCTION NUMBER	FUNCTION REQUIREMENTS																							
1 8	CORRELATE USER REQUESTS TO PRODUCTS DETERMINE THAT PRODUCTS ARE COMPLETE PER THE USER REQUEST				X			DATA CLERK		PRODUCTS CONTROL		VARIABLE PROCEDURE		NONE	NONE		X						3 4 2 k)	IBM
1 9	AUTHORIZE PRODUCT DELIVERY AUTHORIZE DELIVERY OF PRODUCT TO USER. DESIGNATE COPIES TO BE SENT TO DISCISE LIBRARY. SUPERVISE PACKAGING OF MATERIALS FOR DELIVERY				X			OPERATIONS MANAGER PACKAGING SPECIALISTS		OPERATIONS CONTROL PROCEDURES MAIL ROOM PROCEDURES		OPEN END DECISION PLANNING		NONE	NONE		X						3 4 2 k)	IBM
1 10	MAINTAIN BROSSE LIBRARY CONTROL RELEASE AND REPRODUCTION OF PRINTED MATERIALS				X			LIBRARY SPECIALISTS		LIBRARY CATALOGS, INDEXED AND PROCEDURES		VARIABLE PROCEDURE		NONE	NONE		X						3 4 2 k)	IBM
1 11	LOG OUT PRODUCTS				X			DATA CLERK		PRODUCT CONTROL PROCEDURES		FIXED PROCEDURE		NONE	NONE		X						3 4 2 k)	IBM
1 12	WORK STATUS REPORTS GENERATE STATUS				X	X		OPERATIONS ANALYST		PRODUCTS CONTROL PROCEDURES		VARIABLE PROCEDURE		NONE	NONE		X				TBD		3 4 2 k)	IBM
1 13	INVENTORY CONTROL MONITOR EXPENDABLES AND GENERATE REORDERS				X	X		OPERATIONS ANALYST		INVENTORY CONTROL PROCEDURES		VARIABLE PROCEDURE		NONE	NONE		X				TBD		3 4 2 k)	IBM

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION		DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.			
		NO. 20		HARDWARE	SOFTWARE	MANUAL	HARDWARE	SOFTWARE	MANUAL	A	B	A	B	A	B	A	B	N. A.	INSPECTION	ANAL. DATA	DEMONST.	TEST		GCHS SPEC	SOFTWARE SPEC.	PERSONNEL SPEC.
		TITLE: REQUEST AND PROCESS ORBITAL DATA																								
		GSFC SPEC. PAR. NO. (7 14 2 AND 7 5 1)																								
FUNCTION NUMBER	FUNCTION REQUIREMENTS																									
2 1	<u>GENERATE REQUEST FOR ORBITAL DATA</u> PERFORM ANALYSIS OF ORBIT ADJUST REQUIREMENTS AND FORMULATE REQUESTS THE INPUTS INCLUDE THE CURRENT ORBIT PREDICTS AND ANY RESTRICTIONS ON WHEN ORBIT ADJUST SHOULD OCCUR. OUTPUT INCLUDES ANY NEEDED TEMPORARY REVISIONS TO THE STANDARD REQUESTS		X	X		X		ORBIT PLANNING SOFTWARE AND ORBIT TECHNICIAN	ORBIT MANUAL AND ORBIT TECHNICIAN	ORBIT CONTROL MANUAL AND RELATED SOFTWARE LOGIC	ORBIT CONTROL MANUAL	GUIDED VARIABLE PROCEDURE	GUIDED VARIABLE PROCEDURE		NONE	NONE	X						NASA		TRM	
2 2	<u>RECEIVE ORBITAL DATA</u> ORBITAL DATA INCLUDES POSITION, VELOCITY, AND ACCELERATION (AT SEVERAL POINTS PER REVOLUTION), TRACKED STATION PARAMETERS AND SUB-SATELLITE POINT DATA. OTHER DATA, SUCH AS POSSIBLE SUB-MONOR INTERFERENCES, CROSS CORRELATION MATRIX, ETC., MAY BE INCLUDED. INITIAL INDICATIONS SUGGEST THAT THE MPSA WILL PROVIDE EACH WEEK A NEW ORBIT PREDICTS WHICH EXTENDS FOR THREE WEEKS			X		X		MAGNETIC TAPE AND PRINTOUT VIA MAIL	MAGNETIC TAPE AND PRINTOUT VIA MAIL	NONE	NONE	CLERICAL ROUTINE	CLERICAL ROUTINE		NONE	NONE	X								TRM	
2 3 (5 1) (6 1) (7 2) (7 9 1)	<u>COMPUTE ORBITAL-RELATED PARAMETERS</u> THIS TASK IS NEEDED TO COMPLETE ANY ORBIT WORK NOT PERFORMED BY THE MPSA (GCHS ORBIT PREDICTS WORK). IT COULD INCLUDE PROPAGATION OF INITIAL ERROR ESTIMATES, SIMULATION OF NON-MANUAL THRUSTERS, SUB- MONOR INTERFERENCE PROBLEMS, COMPUTATION OF IN-TRACK ERROR, ROUNDED TIME SCHEDULES, ETC. IN ADDITION, THOSE STUDIES COMPARING SUCCESSIVE ORBIT PREDICTS ALLOW BETTER MODELING OF THE THRUSTERS, THE WIND COEFFICIENT, AND THE EFFECTS OF VARIATIONS IN ATMOSPHERIC DENSITY		X	X		X	X	ORBITAL SOFTWARE, ORBIT TECHNICIAN, ORBIT MANUAL	ORBITAL SOFTWARE, ORBIT TECHNICIAN, ORBIT MANUAL	ORBIT CONTROL LOGIC IN SOFTWARE AND IN ORBIT MANUAL	ORBIT CONTROL LOGIC IN SOFTWARE AND IN ORBIT MANUAL	GUIDED VARIABLE PROCEDURE	GUIDED VARIABLE PROCEDURE		REVISE EXIST- ING SOFTWARE	REVISE EXIST- ING SOFTWARE	X						NASA CP-2000		TRM	
2 4	<u>UPDATE ORBITAL DATA FILE</u> FILE ALL NEW ORBIT DATA. PERFORM MIRRORING OF OLD DATA. (THE MIRRORING PROCESS COULD INCLUDE DELETING OF THE LATTER TWO WEEKS OF DATA WHEN A NEW THREE WEEKS PREDICTS ARRIVES)		X	X		X		GCHS FILE LIBRARY AND ORBIT SOFTWARE	GCHS FILE LIBRARY	NONE	NONE	FIXED PROCEDURE	OUTSIDE FIXED PROCEDURE		NONE	NONE	X							CP-2000		TRM

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO. 30 TITLE: REQUEST AND PROCESS WEATHER PREDICTIONS GSFC SPEC. PAR. NO. (2 11 2 2)		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.		RESP.		
				A		B		A	B	A	B	A	B		A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC FOR SCHED. (2-1989)		SOFTWARE SPEC.	PERSONNEL SPEC.
				HARDWARE	SOFTWARE	HARDWARE	SOFTWARE																		
FUNCTION NUMBER	FUNCTION REQUIREMENTS			HARDWARE	SOFTWARE	HARDWARE	SOFTWARE	A	B	A	B	A	B	A	B	A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC FOR SCHED. (2-1989)	SOFTWARE SPEC.	PERSONNEL SPEC.
3 1	EXAMINE MISSION SCHEDULE ESTABLISH AREAS FOR WHICH WEATHER DATA ARE NEEDED TO SUPPORT THE PLANNED PERSON COVERAGE SCHEDULING. THE WEATHER DATA REQUIRED AND ITS POTENTIAL COST IN SOME CASES DEPENDS ON THE RELATIVE PROXIMITY OF COVERAGE REQUESTS, THE PROJECTED SCHEDULE, ETC.			X	X		X	OCC SCHEDULER AND FILE SEARCH AND/OR PRINTOUT SOFTWARE	OCC SCHEDULER	USER'S REQUEST FILE PROJECTED COVERAGE SCHEDULE	PROJECTED COVERAGE SCHEDULE	GUIDED DECISION MAKING	OPEN END DECISION MAKING	HOW SENSITIVE SHOULD ERTS SCHEDULING BE TO WEATHER PREDICTIONS? WHAT ARE THE POTENTIAL ADVANTAGES OF SOFTWARE METHODS?	NEED SOFTWARE TOOL	NONE		X					CP-2007	3 4 1c	TRW
3 2 (7 14 2 2)	PREPARE AND VERIFY WEATHER REQUEST FOLLOWING ESTABLISHED FORMAT RULES, LIST THE DETAILS OF THE DESIRED WEATHER DATA				X		X	OCC SCHEDULER	OCC SCHEDULER	WEATHER REQUEST MANUAL	WEATHER REQUEST MANUAL	FIXED PROCEDURE	FIXED PROCEDURE	FOR A PARTICULAR TIME AND LOCATION FOR COVERAGE, HOW MANY SUCCESSIVE WEATHER REQUESTS SHOULD BE GENERATED?	NONE	NONE		X						3 4 1c	TRW
3 3 (7 14 2 2)	TRANSMIT REQUESTS TO ESSA SEND THE REQUESTS IN A TIMELY MANNER AND AT REASONABLE INTERVALS TO ALLOW ESSA TO RESPOND IN A TIMELY MANNER			X	X	X	X	WEATHER DATA TECHNICIAN DATA LINK TSD	WEATHER DATA TECHNICIAN DATA LINK TSD	OCC SCHEDULER	OCC SCHEDULER	FIXED PROCEDURE	FIXED PROCEDURE	WHAT TRANSMISSION MEDIUM IS BEST FOR WEATHER REQUESTS?	NONE	NONE		X					3 3 1 2 2	3 4 1c	TRW
3 4 (7 14 2 2)	RECEIVE AND FILE WEATHER DATA LOG IN THE WEATHER DATA, CHECK CONTENT, QUALITY AND ESSA CONFIDENCE LEVELS, AND NOTIFY SCHEDULING PERSONNEL			X	X	X	X	WEATHER DATA TECHNICIAN DATA LINK TSD	WEATHER DATA TECHNICIAN DATA LINK TSD	NONE	NONE	VARIABLE PROCEDURE, DECISION MAKING	VARIABLE PROCEDURE, DECISION MAKING	WHAT FORMAT, DATA STORAGE METHOD, AND TRANSMISSION MEDIUM ARE BEST FOR ERTS? POTENTIAL ADVANTAGES OF WEATHER-RECEIVING EQUIPMENT IN THE OCC	NONE	NONE		X					3 3 1 2 2	3 4 1c	TRW

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.		RESP.
		NO	4 0	A		B		A	B	A	B	A	B	A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	ODS SPEC. DEF. DATES 0-1376	SOFTWARE SPEC.	PERSONNEL SPEC.	
		TITLE		H/W SOFTWARE	M MANUAL	H/W SOFTWARE	M MANUAL																	
		GSFC. SPEC. PAR NO. (7 14 2, 7 # 3)																						
FUNCTION NUMBER	FUNCTION REQUIREMENTS																							
4 1	RECEIVE STADAN/MSFN STATION CONTACT DATA MSFN SUPPLIES GROUND STATION CONTACT TIMES AND ANGLES		X	X	X	X	HARD COPY VIA COMMUNICATIONS LINK	HARD COPY VIA COMMUNICATIONS LINK	NONE	NONE	CLERICAL ROUTINE	CLERICAL ROUTINE	NONE	NONE	NONE	NONE	X				3 3 1 2 4	3 4 1 1	GSFC/TRA	
4 2	SELECT DESIRED STADAN/MSFN SUPPORT SCHEDULE FOR ACQUISITION OPPORTUNITIES FROM THE STATION CONTACT DATA AND AFTER ACQUISITION OPPORTUNITIES, CORRELATE THE PRELIMINARY MISSION SCHEDULE AND SELECT THE STATION CONTACTS REQUIRED TO SUPPORT THIS SCHEDULE			X		X	GROUND FACILITIES SCHEDULING SOFTWARE	OPERATIONS PERSONNEL	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	NONE	GUIDED DECISION MAKING	OPEN END DECISION MAKING	LEVEL OF DETAIL PLANNING	SOFTWARE	NONE	X					CP-2005		18H	
4 3	DETERMINE CONTINGENCY STADAN/MSFN SUPPORT SCHEDULES REPLY 4 2 ASSUMING REASONABLE STATION NON-AVAILABILITY SITUATIONS TO OBTAIN ALTERNATE REQUESTS			X		X	GROUND FACILITIES SCHEDULING SOFTWARE	OPERATIONS PERSONNEL	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	NONE	GUIDED DECISION MAKING	OPEN END DECISION MAKING	NUMBER OF CONTINGENCY SCHEDULES	NONE	NONE	X					CP-2006		18H	
4 4	REQUEST STADAN/MSFN SUPPORT REQUESTS FOR STADAN/MSFN GROUND FACILITIES SUPPORT ARE SENT TO OPSCOM/MSFSC FOR APPROVAL		X	X	X	X	HARD COPY VIA COMMUNICATIONS LINK	HARD COPY VIA COMMUNICATIONS LINK	NONE	NONE	FIXED PROCEDURE	FIXED PROCEDURE	NONE	NONE	NONE	NONE	X				3 3 1 2 4	3 4 1 1	18H	
4 5	RECEIVE APPROVED SCHEDULE OPSCOM/MSFSC RETURNS AN APPROVED SCHEDULE IN RESPONSE TO OGC GROUND SUPPORT REQUESTS		X	X	X	X	HARD COPY VIA COMMUNICATIONS LINK	HARD COPY VIA COMMUNICATIONS LINK	NONE	NONE	CLERICAL ROUTINE	CLERICAL ROUTINE	NONE	NONE	NONE	NONE	X				3 3 1 2 4	3 4 1 1	18H	
4 6	PREPARE AND DISTRIBUTE FINAL MISSION SCHEDULE A FINAL MISSION PLAN IS DETERMINED ACCORDING TO THE APPROVED SUPPORT SCHEDULE			X		X	GROUND FACILITIES SCHEDULING SOFTWARE	OPERATIONS PERSONNEL	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	NONE	NONE	OPEN END DECISION MAKING	NONE	SOFTWARE	NONE	X					CP-2911	3 4 1 0	18H	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.
		NO. 50		HARDWARE	SOFTWARE	MANUAL	HARDWARE	SOFTWARE	MANUAL	A	B	A	B	A	B	A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDS SPEC. SOFTWARE SPEC.	PERSONNEL SPEC.	
		TITLE																							
		GSFC. SPEC. PAR. NO.																							
FUNCTION NUMBER	FUNCTION. REQUIREMENTS																								
51	RECEIVE DCS DATA THE DCS DATA FLOWS TO THE DCC OVER NASCON LINKS AFTER THE PASS, BY MAIL, OR DIRECT FROM THE HTF. THE DATA IS IN NASCON MULTIPLEX FORM.	X	X	X	X			FROM NASCON VIA DATA DISTRIBUTION EQUIPMENT	FROM NASCON VIA DATA DISTRIBUTION EQUIPMENT	DCC SCHEDULE	DCC SCHEDULE	CLERICAL ROUTINE	CLERICAL ROUTINE	NONE	NONE	NONE	NONE	X				3 3 1 2 4	HA	TRM	
52	DEMODULATE AND CONDITION DCS DATA THE DIFFICULT TASK OF ESTABLISHING SYNC IS ACCOMPLISHED HERE. THE DCS DATA GOES THROUGH A DEMODULATION AND SYNCHRONIZING PROCESS. THE OUTPUT IS IN AN ORDERLY, PCM STREAM.	X			X			NON-STANDARD DATA HANDLING EQUIPMENT	NON-STANDARD DATA HANDLING EQUIPMENT	NONE	NONE	NONE	NONE	NONE	MAJOR DEVELOPMENT OF DCS EQUIPMENT	MAJOR DEVELOPMENT OF DCS EQUIPMENT				X	3 1 2 6			TRM	
53	ADD TIME OF PASS FOR DCS DATA	X			X			STANDARD TIME SIGNAL INPUT	STANDARD TIME SIGNAL INPUT	NONE	NONE	NONE	NONE	ADD A STANDARD GMT (TIME OF PASS) OR CONTINUOUS TIME TAGS?	NONE	NONE			X			3 1 2 5			TRM
54	RECEIVE HOUSEKEEPING PCM TELEMETRY DATA TO THE DCC IS AT RATES FROM 1 KBPS TO 50 KBPS DEPENDENT ON THE METHOD OF TRANSMISSION FROM THE GROUND STATION.	X	X	X	X			FROM NASCON VIA DATA DISTRIBUTION EQUIPMENT	FROM NASCON VIA DATA DISTRIBUTION EQUIPMENT	DCC SCHEDULE	DCC SCHEDULE	CLERICAL ROUTINE	CLERICAL ROUTINE	NONE	NONE	NONE	NONE	X				3 3 1 2 1 2	HA	TRM	
55	CONDITION PCM HOUSEKEEPING TELEMETRY DATA IS SYNCHRONIZED AND RECONSTRUCTED BUT REMAIN IN SERIAL PCM FORMAT.	X			X			DATA HANDLING EQUIPMENT	DATA HANDLING EQUIPMENT	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE			X		3 3 1 3 9			TRM
56	RECORD CONDITIONED PCM DATA AND GMT ALL DATA ENTERING THE DCC IS RECORDED. PCM TAPES GO EITHER TO STORAGE OR ARE USED IN THE DEMONSTRATION OF 30S-REAL TIME DATA. GMT IS ADDED ON ALL TAPES.	X			X			STANDARD TELEMETRY RECORDER	STANDARD TELEMETRY RECORDER	NONE	NONE	CLERICAL ROUTINE	NONE	NONE	NONE	NONE	NONE			X		3 3 1 7 2 1			TRM
57	DECOMPUTE HOUSEKEEPING AND DCS DATA DATA GOES TO THE DECON AS A SERIAL BIT STREAM AND IS TRANSLATED TO THE DESIRED FORMS, E.G., PARALLEL PCM FOR THE COMPUTER, ANALOG FOR THE STRIP CHART.	X	X		X	X		DATA HANDLING EQUIPMENT	DATA HANDLING EQUIPMENT	DECON PROGRAMS (SOFTWARE CONTROLLED)	DECON PROGRAMS (SOFTWARE CONTROLLED)	NONE	NONE	USE OF SAME (TIMESHARED) VERSUS SEPARATE DECON PROGRAMS FOR PCM AND DCS DATA (DECON WILL BE TIMESHARED)	NONE	NONE				X		3 3 1 1 3 9			TRM

REQUIREMENTS ALLOCATION SHEET	FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.				RESP.	
	NO. 40		TRANSFER USER/OPERATOR REQUESTS TO EVENT TITLE: LIST																							
	GSFC. SPEC. PAR. NO. (7 14 2 1, 7 14 2 2)																									
FUNCTION NUMBER	FUNCTION REQUIREMENTS		HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL	A	B	A	B	A	B			A	B	N. A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	COMPL. SPEC. OR SYSTEM C-LEVEL	SOFTWARE SPEC.	PERSONNEL SPEC.		
6 1	RECEIVE USER REQUESTS SENSOR COVERAGE REQUESTS ARE RECEIVED FROM THE CUSTOMER VIA USER LIAISON OFFICE			X		X	NONE	NONE	NONE	NONE	CLERICAL ROUTINE	CLERICAL ROUTINE	NONE		NONE	NONE	X							3 4 10	GSFC/TRM	
6 2	UPDATE USER REQUEST FILE REQUESTS ARE INCORPORATED INTO WOC SENSOR COVERAGE REQUEST FILE		X			X	USER REQUEST FILE MAINTENANCE SOFTWARE	NONE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	NONE	NONE	FIXED PROCEDURE	USER REQUEST FILE ORGANIZATION AND STRUCTURE	SOFTWARE		NONE		X					CP-2003		TRM	
6 3	DETERMINE AREA ACQUISITION OPPORTUNITIES FOR RHP AND HSS GENERATE TIME-ORDERED TABLE OF USER REQUESTS VISIBLE TO SENSORS		X			X	ACQUISITION SOFTWARE	ACQUISITION SOFTWARE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	NONE	NONE	SPEED VERSUS ACCURACY OF METHOD	SOFTWARE	SOFTWARE			X					CP-2007		TRM	
6 4	GENERATE LIST OF ACQUISITION OPPORTUNITIES DISPLAY TIME-ORDERED ACQUISITION OPPORTUNITIES		X	X		X	DISPLAY SOFTWARE AND PRINTER	DISPLAY SOFTWARE AND PRINTER	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	NONE	NONE	TYPE OF DISPLAY	SOFTWARE	SOFTWARE			X				3 3 1 1 6	CP-2007		TRM	
6 5	DETERMINE RELATIVE VALUES FOR VISIBLE AREAS NUMERICAL VALUES WILL BE ASSIGNED TO CANDIDATE VIDEO COVERAGE AREAS, REFLECTING USER PRIORITIES AND REQUIREMENTS, PREDICTED CLOUD COVER CONDITIONS, ETC., FOR SELECTING SENSOR OPERATIONS		X			X	SENSOR SCHEDULING SOFTWARE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	NONE	NONE	NONE	FIXED PROCEDURE	METHOD OF WEIGHTING AREAS	SOFTWARE	NONE			X					CP-2009		TRM	
6 6	GENERATE PLOT OF SWATH WITH VALUES A TABLE OF VALUES OF SWATH IS GENERATED FOR CANDIDATE COVERAGE AREAS		X	X		X	DISPLAY SOFTWARE AND DISPLAY DEVICE	DISPLAY SOFTWARE AND DISPLAY DEVICE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	NONE	NONE	TYPE OF DISPLAY PRINTER VERSUS CRT	SOFTWARE	SOFTWARE			X				3 3 1 1 6	CP-2009		TRM	
6 7	SELECT SENSOR/VIDEO RECORDER OPERATIONS SENSOR OPERATIONS AND REQUIRED VIDEO RECORDER OPERATIONS ARE SELECTED WITH RESPECT TO SWATH VALUES, OPERATIONAL CONSTRAINTS AND PAYLOAD VALUES		X			X	SENSOR SCHEDULING SOFTWARE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	NONE	NONE	NONE	FIXED PROCEDURE	DEGREE OF OPTIMIZATION OF SCORE	SOFTWARE	NONE			X					CP-2010		TRM	
PAGE NUMBER 7																										

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.				RESP.			
		NO. 6.0		TITLE LIST (CONTINUE)	GSFC. SPEC. PAR NO (7-14)	HARDWARE	SOFTWARE	MANUAL	HARDWARE	SOFTWARE	MANUAL	A	B	A	B	A	B	A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	CDHS SPEC. REQ. SUBSYSTEM E-137506	SOFTWARE SPEC.	PERSONNEL SPEC.	
FUNCTION NUMBER.	FUNCTION REQUIREMENTS																											
6.8	TRANSFER PAYLOAD OPERATIONS TO PAYLOAD EVENTS DETERMINE THE SPECIFIC PAYLOAD EVENTS/REQUIRED TO IMPLEMENT THE PAYLOAD OPERATIONS		X				X		SENSOR SCHEDULING SOFTWARE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	NONE	NONE	NONE	VARIABLE PROCEDURES	NONE	SOFTWARE	NONE								CP-2010		TRM	
6.9	DETERMINE SPACECRAFT/STATION COMMUNICATION EVENTS FOR THE STATION/SHIP STATIONS SCHEDULED FOR SHIPMENT, UTILIZE THE STATION CONTACT TIMES TO DETERMINE VEHICLE COMMUNICATION EVENT TIMES		X				X		VEHICLE EVENT GENERATION SOFTWARE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	NONE	NONE	NONE	FIXED PROCEDURE	NONE	SOFTWARE	NONE								CP-2010		TRM	
6.10	DETERMINE ORBIT ADJUST EVENTS SELECT THRUSTER TIMES FOR ORBIT MAINTENANCE		X				X		ORBIT ADJUST SOFTWARE	OPERATIONS REQUEST CARD, DATA CROSS, AND SOFTWARE DATA BASE	NONE	NONE	NONE	OPEN SWD DECISION MAKING	HASN ORBIT ADJUST CAPABILITY VERSUS DOC CAPABILITY	SOFTWARE	NONE								CP-2010		TRM	
6.11	DETERMINE SPACECRAFT HOUSEKEEPING EVENTS FROM TELEMETRY DERIVED SPACECRAFT HEALTH AND STATUS DATA, SELECT EVENTS WHICH MAINTAIN SPACECRAFT HEALTH		X				X		OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	NONE	NONE	GUIDED DECISION MAKING	GUIDED DECISION MAKING	NONE	NONE	NONE										TRM	
6.12	NONE EVENTS INTO SINGLE NON-CONFLICTING CHRONOLOGICAL EVENT LIST PLANNED SPACECRAFT/PAYLOAD EVENTS ARE REQUIRED TO GENERATE A MISSION PLAN WHICH IS COMPATIBLE WITH OPERATIONAL CONSTRAINTS		X				X		VEHICLE EVENT GENERATION SOFTWARE	COMMAND GENERATION SOFTWARE	NONE	NONE	NONE	NONE	NONE	SOFTWARE	SOFTWARE								CP-2010 CP-2011		TRM	
6.13	DISPLAY EVENT LIST THE LIST OF PLANNED SPACECRAFT/PAYLOAD EVENTS IS DISPLAYED FOR APPROVAL BY MISSION PLANNING PERSONNEL		X	X	X	X	X	X	DISPLAY SOFTWARE AND DISPLAY DEVICE	DISPLAY SOFTWARE AND DISPLAY DEVICE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	OPERATIONS REQUEST CARD AND SOFTWARE DATA BASE	GUIDED DECISION MAKING	GUIDED DECISION MAKING	TYPE OF DISPLAY PRINTER VS CRT	SOFTWARE	SOFTWARE								CP-2011		TRM	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.		
		NO. 70																								
		TITLE: TRANSFER THE EVENT LIST TO A COMMAND LIST																								
		GSFC. SPEC. PAR. NO. (7 14, 7 14 2, 7 6 1 2)																								
FUNCTION NUMBER	FUNCTION REQUIREMENTS		HARDWARE	SOFTWARE	MANUAL	HARDWARE	SOFTWARE	MANUAL	A	B	A	B	A	B		A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC NO. 14-100-100	SOFTWARE SPEC.	PERSONNEL SPEC.	
71	ASSOCIATE THE EVENT LIST WITH COMMAND SEQUENCES EACH EVENT HAS AN ASSOCIATE SEQUENCE OF COMMANDS NECESSARY FOR ITS OCCURRENCE. THESE COMMAND SEQUENCES ARE CALLED FROM THE DATA BASE FOR EACH PLANNED EVENT		X	X		X			COMMAND GENERATION SOFTWARE	SPECIALTY TRAINED OPERATIONS PERSONNEL	SOFTWARE DATA BASE STRUCTURE- OPERATIONS REQUEST CARD OR CONSOLE INPUT	MANUAL COMMAND LIST ALTERATION	GUIDED DECISION MAKING	OPEN END DECISION MAKING	BEST DIVISION OF WORK (LOGIC CHECKS AND COMBINATION TASKS) BETWEEN MAN AND SOFTWARE	COMPLETE SOFTWARE DEVELOPMENT	DEFINE COMMAND LISTS	X						CP-2003	3 1 41	TRM
72 (7 6 6)	DETERMINE UNIVERSAL TIME/SPACECRAFT SOP CLOCK TIME CORRELATION THE SOP CLOCK RECYCLES PERIODICALLY TO ZERO AND DRIFTS AS WELL. OGC DETERMINES UNIVERSAL TIME/SOP CLOCK CORRELATION FOR MISSION SCHEDULING		X		X	X			UNIVERSAL TIME/ CPU TIME CORRELATION SOFTWARE	U T/CPD TIME CORRELATION SOFTWARE AND EXTERNAL SPACECRAFT CLOCK SIMULATOR	SOFTWARE DATA BASE	SOFTWARE DATA BASE	NONE	NONE	NONE	COMPLETE SOFTWARE DEVELOPMENT	SIMULATION SOFTWARE/ SOFTWARE DEVELOPMENT	X						CP-3004		TRM
73 (7 6 6)	ASSIGN EXECUTION TIME (SPACECRAFT SOP CLOCK) FOR STORED COMMANDS EVENTS HAVE BEEN DETERMINED IN UNIVERSAL TIME, THIS TIME MUST BE CONVERTED TO SOP TIME		X			X			COMMAND GENERATION SOFTWARE	OPERATIONS PERSONNEL	SOFTWARE DATA BASE	MANUAL ASSIGNMENTS	NONE	FIXED PROCEDURE	NONE	COMPLETE SOFTWARE DEVELOPMENT	WRITE OPERATIONS MANUAL & TRAIN PERSONNEL	X						CP-3004		TRM
74	ASSIGN SPACECRAFT STORED COMMAND PROGRAMMER ADDRESSES COMMAND STORAGE ADDRESSES ARE ASSIGNED BASED ON CURRENT SPACECRAFT SOP STATUS		X			X			COMMAND GENERATION SOFTWARE	OPERATIONS PERSONNEL	SOFTWARE DATA BASE	MANUAL ASSIGNMENTS	NONE	FIXED PROCEDURE	NONE	COMPLETE SOFTWARE DEVELOPMENT	WRITE OPERATIONS MANUAL & TRAIN PERSONNEL	X						CP-3007		TRM
75	CHECK FOR AND RESOLVE COMMAND SEQUENCING CONFLICTS PROPER TIME SEQUENCING BETWEEN COMMANDS IS VERIFIED TO BE COMPATIBLE WITH HARDWARE		X	X		X			COMMAND GENERATION SOFTWARE	OPERATIONS PERSONNEL	SOFTWARE DATA BASE	MANUAL CONFLICT RESOLUTION USING OPERATIONS MANUAL	GUIDED VARIABLE PROCEDURE	OPEN END DECISION MAKING	PERCENT OF LOGIC PERFORMED BY SOFTWARE	COMPLETE SOFTWARE DEVELOPMENT	OPERATIONS A TASKING PROCEDURES DEVELOPMENT	X						CP-2005	3 1 47	TRM
76 (7.6 1 2)	VERIFY AND ACCEPT COMMAND LISTS MISSION PLANNERS EXERCISE A MANUAL MONITORING FUNCTION DURING COMMAND GENERATION		X	X	X	X			DISPLAY HARDWARE, DISPLAY SOFTWARE, OPERATIONS CONTROLLER	OPERATIONS CONTROLLER	MANUAL INTERVENTION VIA ON-LINE INTERACTIVE CONSOLE OR FUNCTION CARD	OPERATIONS CONTROLLER INTERVENTION	GUIDED VARIABLE PROCEDURE	VARIABLE PROCEDURE	PRINTER VS CONSOLE VS SOME OTHER DISPLAY	COMPLETE SOFTWARE DEVELOPMENT AND PROCEDURES DEVELOPMENT	PROCEDURES DEVELOPMENT		X				3 3 1 6	CP-2012	3 1 41	TRM
77	DETERMINE MODE OF COMMAND TRANSMISSION A VARIETY OF COMMAND TRANSMISSION MODES ARE AVAILABLE		X	X		X			COMMAND GENERATION SOFTWARE	OPERATIONS CONTROLLER	OPERATIONS REQUEST CARD OR CONSOLE INPUT	OPERATIONS MANUAL	GUIDED DECISION MAKING	OPEN END DECISION MAKING	NONE	SOFTWARE DEVELOPMENT	PROCEDURES DEVELOPMENT	X						CP-3012	3 1 47	TRM

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.	
		NO. 80		HARDWARE	SOFTWARE	HARDWARE	SOFTWARE	A	B	A	B	A	B			A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDS SPEC. DATE	SOFTWARE SPEC.		PERSONNEL SPEC.
		TITLE GSFC. SPEC. PAR NO. (7 16 2 1)																								
FUNCTION NUMBER	FUNCTION REQUIREMENTS																									
8.1	CHECK CURRENT SPACECRAFT STATUS THIS STEP IS PRECAUTIONARY IF ALL IS NORMAL IT ONLY INVOLVES A VERIFICATION FROM THE PROJECT OPERATIONS DIRECTOR			X		X	PROJECT OPERATIONS DIRECTOR	PROJECT OPERATIONS DIRECTOR	OPERATIONS MANUAL	OPERATIONS MANUAL	FIXED PROCEDURE	FIXED PROCEDURE	NONE		NONE	NONE			X					3.4.11)	TRM	
8.2	RESPOND TO CONTINGENCIES AS REQUIRED THE NATURE OF THE PROBLEM DETERMINES THE BEST COURSE OF ACTION				X	X	PROJECT OPERATIONS DIRECTOR, OCC PERSONNEL	PROJECT OPERATIONS DIRECTOR, OCC PERSONNEL	OPERATIONS MANUAL	OPERATIONS MANUAL	OPEN END DECISION MAKING	OPEN END DECISION MAKING	PERCENT OF CONTINGENCY ASSISTANCE IN SOFTWARE PROGRAM		PROCEDURES DEVELOPMENT	PROCEDURES DEVELOPMENT			X					3.4.12)	TRM	
8.3	ASSIGN SPACECRAFT ADDRESS ADDRESSES FOR EACH COMMAND STANDARD ADDRESS ASSIGNMENTS ARE MADE FOR EACH COMMAND		X	X		X	COMMAND GENERATION SOFTWARE, OPERATIONS VERIFICATION	COMMAND GENERATION SOFTWARE, OPERATIONS VERIFICATION	SOFTWARE DATA BASE, MANUAL OPERATIONS	SOFTWARE DATA BASE, MANUAL OPERATIONS	VARIABLE PROCEDURE	VARIABLE PROCEDURE	NONE		COMPLETE SOFTWARE DEVELOPMENT	COMPLETE SOFTWARE DEVELOPMENT			X				CP-3007	3.4.13)	TRM	
8.4	FORMAT COMMANDS COMMAND PREFIXES, SYNC BITS, COMMAND COMMENTS, AND PARITY BITS ARE APPLIED TO COMMANDS		X	X		X	COMMAND GENERATION SOFTWARE	COMMAND GENERATION SOFTWARE	SOFTWARE DATA BASE	SOFTWARE DATA BASE	VARIABLE PROCEDURE	VARIABLE PROCEDURE	NONE		COMPLETE SOFTWARE DEVELOPMENT	COMPLETE SOFTWARE DEVELOPMENT			X				CP-3010	3.4.14)	TRM	
8.5	ASSEMBLE COMMAND MESSAGE COMMAND MESSAGES MUST BE COMPATIBLE WITH COMMAND TRANSMISSION EQUIPMENT ARE ASSEMBLED		X	X		X	COMMAND GENERATION SOFTWARE	COMMAND GENERATION SOFTWARE	SOFTWARE DATA BASE	SOFTWARE DATA BASE	VARIABLE PROCEDURE	VARIABLE PROCEDURE	NONE		COMPLETE SOFTWARE DEVELOPMENT	COMPLETE SOFTWARE DEVELOPMENT			X				CP-3016	3.4.15)	TRM	
8.6	DISPLAY AND ANNOTATE COMMAND MESSAGE COMMAND MESSAGES IN CODE FORM WITH LITERAL DESIGNATION ARE DISPLAYED TO MISSION PLANNERS, AND TRANSMISSION INSTRUCTIONS ARE ADDED		X	X		X	COMMAND GENERATION SOFTWARE WITH CRT DISPLAY	COMMAND GENERATION SOFTWARE WITH CRT DISPLAY	DATA BASE	NONE	VARIABLE PROCEDURE	VARIABLE PROCEDURE	NONE		DISPLAY SYSTEM HARDWARE AND SOFTWARE	DISPLAY SYSTEM HARDWARE AND SOFTWARE			X				CP-3013	3.4.16)	TRM	
8.7	WRITE COMMAND MESSAGE IN COMMAND HISTORY FILE WITH STATUS DESIGNATION THE GENERATED COMMANDS ARE RECORDED IN A COMMAND HISTORY FILE AND SPACE IS PROVIDED WITH EACH COMMAND TO INDICATE COMMAND STATUS DURING EACH STEP IN THE COMMANDING PROCESS		X			X	COMMAND FILE HARDWARE SOFTWARE	OPERATIONS PERSONNEL	NONE	NONE	NONE	FIXED PROCEDURE	NONE		COMPLETE SOFTWARE DEVELOPMENT	PROCEDURES DEVELOPMENT			X				CP-3013		TRM	
8.8	FORWARD COMMAND MESSAGES AND INSTRUCTIONS COMMANDS MAY BE FORWARDED TO STATION/HQFN STATIONS VIA A NUMBER OF AVAILABLE PATHS		X	X	X	X	WASCOM TTY, VOICE LINKS, MAIL	WASCOM TTY, VOICE LINKS, MAIL	TTY, TELEPHONE, AND VOICE LINK CONTROLS	TTY, TELEPHONE, AND VOICE LINK CONTROLS	VARIABLE PROCEDURE	VARIABLE PROCEDURE	TTY VERSUS TELEPHONE/VOICEN VERSUS VOICE LINK VERSUS MAIL		NONE	NONE			X			3.3.1.2.4	CP-3013	3.4.17)	TRM	
8.9	VERIFY RECEIPT OF COMMAND MESSAGES AND INSTRUCTIONS BCHD CHECKS AND VOICE VERIFICATION BETWEEN STATION/HQFN AND OCC ARE MADE FOR EVERY COMMAND LEAD		X	X	X	X	WASCOM TTY AND VOICE LINKS	WASCOM TTY AND VOICE LINKS	TTY, TELEPHONE, AND VOICE LINK CONTROLS	TTY, TELEPHONE, AND VOICE LINK CONTROLS	FIXED PROCEDURE	FIXED PROCEDURE	TTY VERSUS TELEPHONE/VOICEN VERSUS VOICE LINK VERSUS MAIL		NONE	NONE			X			3.3.1.2.4	CP-3016	3.4.18)	TRM	
8.10	TRANSMIT COMMANDS COMMANDS ARE TRANSMITTED TO SATELLITE FROM STATION STATIONS OR FROM OCC USING HQFN STATIONS FOR RELAY		X	X	X	X	AUTOMATIC COMMAND ENCODING EQUIPMENT	COMMAND ENCODING EQUIPMENT AND STATION/HQFN JUNCTIONS	COMMAND TRANSMISSION CONTROLS	COMMAND ENCODER CONTROLS	VARIABLE PROCEDURE	VARIABLE PROCEDURE	NONE		COMPLETE SOFTWARE DEVELOPMENT POSSIBLE ENCODER DEVELOPMENT	POSSIBLE ENCODER DEVELOPMENT			X			3.3.1.2.4	CP-3014	3.4.19)	TRM	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.	
		NO. 90		SOFTWARE	MANUAL	SOFTWARE	MANUAL	A	B	A	B	A	B		A	B	N. A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC.	SOFTWARE SPEC.	PERSONNEL SPEC.	
		TITLE																							
		GSFC. SPEC. PAR. NO. (71421)																							
FUNCTION NUMBER	FUNCTION REQUIREMENTS																								
91	<u>VERIFY EXECUTION AND STORAGE OF COMMANDS</u> UTILIZING SPACECRAFT ENABLE BIT, STORED COMMAND MEMORY READYBIT, DISCRETES, AND TELEMETRY PARAMETER CHANGES, EVERY INDICATION OF COMMAND EXECUTION AND STORAGE IS FLAGGED FROM THE PCM DATA STREAM	X		X		COMMAND STATUS UPDATE SOFTWARE	COMMAND SPECIALIST	SOFTWARE DATA BASE	OPERATIONS MANUAL AND TRAINING PROGRAM	NONE	OPEN END DECISION MAKING	NONE	COMPLETE SOFTWARE DEVELOPMENT	COMPLETE OPERATIONS PROCEDURES DEVELOPMENT					X			CP-3015		TSW	
92	<u>COMPARE EXECUTION LIST WITH COMMAND LIST</u> THE VERIFIED EXECUTION LIST IS COMPARED WITH THE LIST OF TRANSMITTED COMMANDS AND IRREGULARITIES ARE NOTED AND DISPLAYED	X		X		COMMAND STATUS UPDATE SOFTWARE	COMMAND SPECIALIST	SOFTWARE DATA BASE	OPERATIONS MANUAL AND TRAINING PROGRAM	NONE	VARIABLE PROCEDURE	NONE	COMPLETE SOFTWARE DEVELOPMENT	COMPLETE OPERATIONS PROCEDURES DEVELOPMENT					X			CP-1001		TSW	
93	<u>RECTIFY COMMAND INPUTS</u> REAL TIME CORRECTIVE ACTION IS INITIATED TO RECTIFY COMMAND INPUTS		X	X		COMMAND SPECIALIST	COMMAND SPECIALIST	OPERATIONS MANUAL AND TRAINING PROGRAM	OPERATIONS MANUAL AND TRAINING PROGRAM	OPEN END DECISION MAKING	OPEN END DECISION MAKING	NONE	COMPLETE SOFTWARE DEVELOPMENT	COMPLETE OPERATIONS PROCEDURES DEVELOPMENT					X					TSW	
94	<u>UPDATE AND DISPLAY EXECUTION/STORAGE HISTORY</u> COMMAND HISTORY AND STORED COMMAND PROGRAM/NUMBER ARE UPDATED TO INDICATE VERIFIED COMMAND EXECUTION/STORAGE, AND THIS INFORMATION IS DISPLAYED FOR MISSION MONITORING	X		X		COMMAND STATUS UPDATE SOFTWARE	COMMAND SPECIALIST	SOFTWARE DATA BASE	OPERATIONS MANUAL AND TRAINING PROGRAM	NONE	VARIABLE PROCEDURE	NONE	COMPLETE SOFTWARE DEVELOPMENT	COMPLETE OPERATIONS PROCEDURES DEVELOPMENT					X			CP-4006		TSW	
95	<u>PREDICT COMMAND AND SPACECRAFT STATUS</u> ACCORDING TO VERIFIED COMMAND EXECUTION/STORAGE THE COMMANDED SPACECRAFT/PAVLOAD CONFIGURATION IS PREDICTED FOR THE NEXT SPACECRAFT COMMAND LEADING INTERVAL	X		X		COMMAND STATUS UPDATE SOFTWARE	COMMAND SPECIALIST	SOFTWARE DATA BASE	OPERATIONS MANUAL AND TRAINING PROGRAM	NONE	OPEN END DECISION MAKING	NONE	COMPLETE SOFTWARE DEVELOPMENT	COMPLETE OPERATIONS PROCEDURES DEVELOPMENT					X			CP-6005		TSW	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO. 10 0 TITLE: PROCESS AND MONITOR OBSERVATORY AND JCS TELEMETRY GSFC. SPEC. PAR. NO (7 14 2 1)		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.
				A		B												N.A.	INSPECTION	ANAL. DATA	DEMONST.				
				HARDWARE	SOFTWARE	HARDWARE	SOFTWARE	A	B	A	B	A	B	A	B										
FUNCTION NUMBER	FUNCTION REQUIREMENTS																								
10 1	<u>RECEIVE DECOMPUTATED SATELLITE HEALTH DATA</u> ACCEPT DATA FROM THE PCM DATA HANDLING EQUIPMENT (REAL TIME OR TAPE REPLAY)	X	X	X	X	X	COMPUTER I/O CONTROLLER PCM TELEMETRY PROCESSING FUNCTION	COMPUTER I/O CONTROLLER PCM TELEMETRY PROCESSING FUNCTION	OPERATIONS MANUAL	OPERATIONS MANUAL	FIXED PROCEDURE	FIXED PROCEDURE		SOFTWARE DEVELOPMENT	SOFTWARE DEVELOPMENT		X			3 3 1 1 2 4	CP-5006	3 4 1k	TRV		
10 2	<u>DISPLAY DECOMPUTATED DATA AND CHECK QUALITY</u> DISPLAY SELECTED DECOMPUTATED HEALTH DATA ON THE OSC STRIP CHART RECORDER. CHECK DATA SYNCHRONIZATION INDICATOR.	X	X	X	X	X	PCM DUE, AND STRIP CHART RECORDERS	PCM DUE, AND STRIP CHART RECORDERS	OPERATIONS MANUAL	OPERATIONS MANUAL	VARIABLE PROCEDURE	VARIABLE PROCEDURE				X			3 3 1 1 2 4		3 4 1j	TRV			
10 3	<u>MONITOR DATA FOR STATUS/LIMIT CHANGE OR ANOMALOUS BEHAVIOR AND REPLAY</u> CHECK DATA FOR STATUS, LIMIT, OR ANOMALOUS BEHAVIOR CHANGE. PROVIDE ALARMS, WHEN APPLICABLE	X	X		X	X	PCM TELEMETRY PROCESSING FUNCTION OCC CONSOLE DISPLAYS	PCM TELEMETRY PROCESSING FUNCTION PRINTOUT	SOFTWARE	SOFTWARE	NONE	VARIABLE PROCEDURE	DEGREE OF COMPLEXITY OF ALARM SYSTEM	SOFTWARE AND DISPLAY DEVELOPMENT	LIMITED SOFTWARE DEVELOPMENT		X		3 3 1 1 2 5 3 3 1 1 4 2 1	CP-5008		TRV			
10 4	<u>UPDATE SATELLITE HEALTH DATA BASE AND TREND FILE</u> UPDATE DATA BASE AND TREND FILE TO REFLECT CURRENT PARAMETER STATUS		X			X	PCM TM PROCESSING FUNCTION	TECHNICAL SUPPORT PERSONNEL	SOFTWARE	OPERATIONS MANUAL	NONE	VARIABLE PROCEDURE	AUTOMATED VERSUS MANUAL DATA BASE AND TREND FILE UPDATE	SOFTWARE DEVELOPMENT	OPERATIONS PROCEDURES		X		3 3 1 1 2 4	CP-5010		TRV			
10 5	<u>COMPUTE AND PRESENT HEALTH PARAMETERS</u> CONVERT SELECTED DATA PARAMETERS TO ENGINEERING UNITS FOR DISPLAY	X	X		X	X	PCM TM PROCESSING FUNCTION OCC CONSOLE DISPLAYS	TECHNICAL SUPPORT PERSONNEL	SOFTWARE	OPERATIONS MANUAL	FIXED PROCEDURE	VARIABLE PROCEDURE		SOFTWARE DEVELOPMENT	OPERATIONS PROCEDURES		X			CP-5009	3 4 1k	TRV			
10 6	<u>EVALUATE SPACECRAFT AND SENSOR PERFORMANCE ON A QUICK LOOK BASIS</u> REVIEW KEY SATELLITE PARAMETERS FOR A QUICK JUDGMENT OF SATELLITE HEALTH			X		X	SATELLITE OPERATIONS AND TECHNICAL SUPPORT PERSONNEL	SATELLITE OPERATIONS AND TECHNICAL SUPPORT PERSONNEL	OPERATION MANUAL	OPERATION MANUAL	OPEN END DECISION MAKING	OPEN END DECISION MAKING		OPERATION MANUALS	OPERATION MANUALS		X				3 4 1j	TRV			
10 7	<u>PREPARE QUICK LOOK REPORTS</u> PREPARE A WRITTEN SUMMARY OF KEY SATELLITE PARAMETERS REFLECTING SATELLITE STATUS	X	X		X	X	PCM TM PROCESSING FUNCTION TECHNICAL SUPPORT PERSONNEL	TECHNICAL SUPPORT PERSONNEL	OPERATION MANUAL	OPERATION MANUAL	GUIDED DECISION MAKING	OPEN END DECISION MAKING		SOFTWARE DEVELOPMENT	SOFTWARE DEVELOPMENT		X			CP-4003	3 4 1j	TRV			

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO. 10-0 PROCESS AND MONITOR OBSERVATORY AND DCS TELEMETRY (CONTINUED) TITLE: GSPC. SPEC. PAR NO. (2 14 2 1)		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.					
				A		B												N. A.												
				FUNCTION NUMBER	FUNCTION REQUIREMENTS			SOFTWARE	MANUAL	SOFTWARE	MANUAL	A	B	A	B	A	B	A	B	A	B	N. A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDS SPEC. OF SYSTEM B-1310	SOFTWARE SPEC.	PERSONNEL SPEC.	
10-6	RECORD PROCESSED SATELLITE TM DATA RECORD IN ENGINEERING UNITS, ON AN ENGINEERING RECORD TAPE, A SAMPLE OF EACH TM PARAMETER			X	X	X	X	PCM TM PROCESSING FUNCTION TAPE RECORDER	PCM TM PROCESSING FUNCTION TAPE RECORDER	SOFTWARE	SOFTWARE	NONE	NONE			SOFTWARE DEVELOPMENT	SOFTWARE DEVELOPMENT			X		3 3 1 1 2 4	CP-5010		TM					
10-9	RECEIVE DECOMMODATED DCS DATA ACCEPT DCS DECOMMODATED DATA FROM DATA HANDLING EQUIPMENT (REAL-TIME OR TAPE REPLAY)			X	X	X	X	COMPUTER I/O CONTROLLER	COMPUTER I/O CONTROLLER	SOFTWARE	SOFTWARE	NONE	NONE			SOFTWARE	SOFTWARE	X				3 3 1 1 2 4			TM					
10-10	MONITOR DCS DATA QUALITY DCS DATA SHALL BE MONITORED TO ENSURE PROPER MESSAGE STRUCTURE INCLUDING ERROR ENCODING				X		X	PCM TELEMETRY PROCESSING FUNCTION	PRINTER TECHNICAL SUPPORT PERSONNEL	SOFTWARE	OPERATIONS MANUAL	NONE	VARIABLE PROCEDURE			SOFTWARE	OPERATIONS PROCEDURES			X		3 3 1 1 2 4	CP-5005	3 4 16	TM					
10-11	PREPARE DCS MAGNETIC TAPE A DCS DATA MAGNETIC TAPE SHALL BE GENERATED			X	X	X	X	PCM TELEMETRY PROCESSING FUNCTION NARROWBAND TAPE RECORDER	PCM TELEMETRY PROCESSING FUNCTION NARROWBAND TAPE RECORDER	SOFTWARE	SOFTWARE					SOFTWARE	SOFTWARE			X		3 3 1 1 2 4	CP-5010		TM					

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO. 110 PERFORM SATELLITE TREND ANALYSIS AND STATUS: PRELIMINARY GSFC. SPEC. PAR. NO. 17 14 2 11		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.	
				A		B		A	B	A	B	A	B	A	B	N. A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC REQ. SYSTEM CP-5000	SOFTWARE SPEC.	PERSONNEL SPEC.			
				HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL																			
																								A		B
FUNCTION NUMBER	FUNCTION REQUIREMENTS																									
11 1	RETRIEVE AND DISPLAY TREND DATA RETRIEVE AND DISPLAY DATA PARAMETERS FROM THE SPACECRAFT AND SEND TO TREND DATA FILE			X	X		X	PCM TM PROCESSING FUNCTION OCC CONSOLE DISPLAYS	ANALYST TREND FILE	SOFTWARE	TECHNICAL SUPPORT DATA ANALYST	NONE	VARIABLE PROCEDURE			SOFTWARE DEVELOPMENT	RIGID DATA HANDLING PROCEDURES		X				3 3 1 1 2 5 3 3 1 1 4 2 1 CP-5000	3 4 1 j	TRM	
11 2	RETRIEVE AND DISPLAY SELECTED SATELLITE PARAMETERS RETRIEVE AND DISPLAY ANY ADDITIONAL INFORMATION AND/OR SELECTED SATELLITE PARAMETERS RELATED TO TREND ANALYSIS			X	X	X	X	PCM TM PROCESSING FUNCTION OCC CONSOLE DISPLAYS	ENGINEERING DECODE TAPE RECORDED PRINTER AND STRIP CHART RECORDER	SOFTWARE	TECHNICAL SUPPORT DATA ANALYST	NONE	VARIABLE PROCEDURE			SOFTWARE DEVELOPMENT			X				3 3 1 1 2 5 3 3 1 1 4 2 1 CP-5000	3 4 1 j	TRM	
11 3	ANALYZE SATELLITE TREND DATA BASED ON TREND DATA FILE AND SELECTED SATELLITE PARAMETER DISPLAYS, PERFORM A TREND ANALYSIS AND COMPARE WITH EXPECTED TRENDS			X	X	X	X	OCC CONSOLE DISPLAYS PCM TM PROCESSING FUNCTION SPECIAL PRESENTATION FORMATS	TECHNICAL SUPPORT DATA ANALYST SPECIAL PRESENTATION FORMATS	HANDWRITING PREPARED TREND CURVES	TECHNICAL SUPPORT DATA ANALYST	GUIDED DECISION MAKING	OPEN END DECISION MAKING	DEGREE OF SIMPLIFICATION OF SOFTWARE TREND DISPLAYS AND NUMBER OF PARAMETERS USE OF SLIDES WITH CRT DISPLAYS		SOFTWARE DEVELOPMENT SPECIAL PRESENTATION FORMATS	SPECIAL PRESENTATION FORMATS		X				3 3 1 1 2 5 3 3 1 1 4 2 1	3 4 1 j	TRM	
11 4	IDENTIFY POTENTIAL PROBLEMS AND SEND ALARMS NOTE ANOMALIES IN TREND DATA AND ALERT OPERATIONS SECTION			X	X	X	X	PCM TM PROCESSING FUNCTION OCC CONSOLE DISPLAYS	TECHNICAL SUPPORT DATA ANALYST	HANDWRITING PREPARED TREND CURVES	TECHNICAL SUPPORT DATA ANALYST	GUIDED DECISION MAKING	OPEN END DECISION MAKING			SOFTWARE			X				3 3 1 1 2 5 3 3 1 1 4 2 1	3 4 1 j	TRM	
11 5	RETAIN SELECTED RESULTS OF TREND ANALYSIS RETAIN POTENTIAL PROBLEM TREND ANALYSIS FOR FUTURE COMPARISON PURPOSES				X		X	OPERATIONS MANUAL	TECHNICAL SUPPORT DATA ANALYST	OPERATIONS MANUAL	TECHNICAL SUPPORT DATA ANALYST	VARIABLE PROCEDURE	VARIABLE PROCEDURE						X						3 4 1 j	TRM
11 6	PREPARE LIST OF HOUSEKEEPING FUNCTIONS PREPARE A LIST OF CORRECTIVE OR DIAGNOSTIC SATELLITE EVENTS BASED ON TREND ANALYSIS AND SUBSEQUENT DIAGNOSIS				X		X	OPERATIONS MANUAL	SATELLITE OPERATIONS PERSONNEL & TECHNICAL SUPPORT DATA ANALYST	OPERATIONS MANUAL	SATELLITE OPERATIONS PERSONNEL & TECHNICAL SUPPORT DATA ANALYST	OPEN END DECISION MAKING	OPEN END DECISION MAKING						X						3 4 1 j	TRM
11 7	PREPARE TREND DATA SUMMARY AND REPORTS GENERATE WRITTEN REPORTS OF RESULTS OF TREND ANALYSIS				X		X	OPERATIONS MANUAL	TECHNICAL SUPPORT DATA ANALYST	OPERATIONS MANUAL	TECHNICAL SUPPORT DATA ANALYST	OPEN END DECISION MAKING	OPEN END DECISION MAKING						X						3 4 1 j	TRM

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.													
		NO. 12 0		TITLE <u>MORE INITIAL ATTITUDE DETERMINATION</u> GSFC. SPEC. PAR. NO. _____		HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL	A	B	A	B	A	B		A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	CDHS SPEC. D-1150 ATTITUDE	SOFTWARE SPEC.	PERSONNEL SPEC.											
FUNCTION NUMBER	FUNCTION REQUIREMENTS																																				
12 1	IDENTIFY SENSOR OPERATIONS TIME TIME OF SENSOR OPERATION DETERMINED FROM TIMING SIGNAL, IN HARMONY BAND DATA																X	X	X	X	THREE RATE GYRO	SPACECRAFT RE- ACTION WHEELS	SOFTWARE	SOFTWARE	NONE	NONE	NONE	NONE	NONE	X					3 3 1 2 4		TRM
12 2	READ BODY-RATE/BODY POINT DATA TAPE SAID TAPE GENERATED BY 5 0																X	X	X	X	STAR FIELD SCANNER (SPLIT OR SCANS TYPE)	HORIZON SCANNER AND YAW GYRO	SOFTWARE	SOFTWARE	NONE	NONE	NONE	SOFTWARE DEVELOPMENT	NONE	X					3 3 1 2 4		TRM
12 3	EDIT ATTITUDE DATA ATTITUDE DATA FOR TIMES OF SENSOR OPERATION IS PULLED																	X			ATTITUDE DETERMINA- TION SOFTWARE	NONE	SOFTWARE DATA BASE	NONE	NONE	NONE	NONE	COMPLETE SOFT- WARE DEVELOPMENT	NONE	X							TRM
12 4	DETERMINE UNIVERSAL TIME OUTPUT OF 12 1 IS CONVERTED TO UNIVERSAL TIME																	X		X	SPACECRAFT TIME/ UNIVERSAL TIME CORRELATION SOFT- WARE	SPACECRAFT TIME/ UNIVERSAL TIME CORRELATION TIME AND SPACECRAFT CLOCK SIMULATOR	SOFTWARE DATA BASE	NONE	NONE	FIXED PROCEDURE	SOFTWARE CLOCK VS HARDWARE SIMULATION	COMPLETE SOFT- WARE DEVELOPMENT	SIMULATION HARDWARE/ SOFTWARE DEVELOPMENT	X					3 4 1a)		TRM
12 5	GENERATE ENGINE'S ATTITUDE/TIME DATA TAPE																	X			ATTITUDE DETERMINA- TION SOFTWARE	NONE	SOFTWARE DATA BASE	NONE	NONE	NONE	NONE	COMPLETE SOFT- WARE DEVELOPMENT	NONE	X						TRM	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.		
		NO	13 0	A		B		A	B	A	B	A	B	A	B	N. A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDS SPEC.	SOFTWARE SPEC	PERSONNEL SPEC.			
		TITLE		HARDWARE	SOFTWARE	MANUAL	HARDWARE																		SOFTWARE	MANUAL
		GSFC. SPEC. PAR. NO. (7 14 2)																								
FUNCTION NUMBER	FUNCTION REQUIREMENTS		HARDWARE	SOFTWARE	MANUAL	HARDWARE	SOFTWARE	MANUAL	A	B	A	B	A	B		A	B									
13 1	MAINTAIN SPACECRAFT AND SENSOR STATUS UPDATE SPACECRAFT HEALTH AND STATUS DATA IN THE DATA BASE. UPDATE SENSOR STATUS AND IDENTIFY VIDEO AND FOR RECORDER CONTENTS		X	X		X			DATA BASE UPDATE ROUTINE, OCC MONITOR	DATA TECHNICIAN	PROGRAM INPUT VIA ALPHANUMERIC KEYBOARD AND CARD READER	OPERATION MANUAL	GUIDED VARIABLE PROCEDURE	VARIABLE PROCEDURE	METHOD OF DATA STORAGE	DATA STORAGE AND RETRIEVAL SOFTWARE	STATUS FORMAT	X				CP-5003		TRW		
13 2	MAINTAIN GROUND EQUIPMENT STATUS EVALUATE AND CONTROL OPERATIONAL STATUS OF THE OCC MONITOR COMMUNICATIONS, COMPUTER OPERATIONS AND DATA SAMPLING INSURE PROPER DATA INPUTS BASED ON DATA VOLUME AND EQUIPMENT READINESS		X	X		X			EQUIPMENT MONITORING SOFTWARE, OCC MONITORS	OCC MONITORS	CARD READER INPUT AND EQUIPMENT OUTPUTS	EQUIPMENT MANUAL	GUIDED VARIABLE PROCEDURE	VARIABLE PROCEDURE		EQUIPMENT MONITORING SOFTWARE		X						TRW		
13 3	COMPARE CURRENT OPERATIONS TO PLANNED EVENT LIST COMPARE LISTING OF ACTUAL SYSTEM EVENTS TO PREVIOUSLY DERIVED PLANNED EVENT LIST TO IDENTIFY DEVIATIONS FROM NOMINAL OPERATIONS PLAN		X	X		X			COMPUTER LISTING OF EVENTS	OCC OPERATIONS DIRECTOR			VARIABLE PROCEDURE		EVENT LIST DISPLAY ROUTINE	EVENT LIST EVENT ROUTINE	EVENT LIST EVENT ROUTINE	X						TRW		
13 4	REPORT STATUS OF USER REQUEST FILE IDENTIFY USER REQUESTS WHICH WERE NOT COMPLETED		X	X		X			OCC MONITOR	OCC TECHNICAL SUPPORT PERSONNEL			VARIABLE PROCEDURE					X				CP-2003		TRW		
13 5	REPORT SYSTEM OPERATIONS SUMMARY PREPARE PERIODIC PRINTOUT OF PERFORMANCE, STATUS AND HEALTH PARAMETERS OF SPACECRAFT AND GROUND DATA SYSTEM		X	X		X			PRINTOUT ROUTINE, OCC TECHNICAL SUPPORT PERSONNEL	OCC TECHNICAL SUPPORT PERSONNEL			VARIABLE PROCEDURE		SUMMARY PRINT ROUTINE	SUMMARY PRINT ROUTINE	SUMMARY FORMAT	X				CP-5000		TRW		

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION		DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.		
		NO	TITLE	SOFTWARE A	MANUAL B	SOFTWARE A	MANUAL B	A	B	A	B		A	B	N.A.	INSPECTION	ANAL. DATA	DEMONSTR.	TEST	GDHS SPEC.	SOFTWARE SPEC.	PERSONNEL SPEC.		
		14 0	UPDATE COVERAGE /OPERATOR REQUESTS BASED ON MISSION OPERATIONS																					
		FUNCTION NUMBER	FUNCTION REQUIREMENTS	GSFC. SPEC. PAR. NO	(7 14 2 1)																			
14 1	<u>DETERMINE PAYLOAD SENSOR COVERAGE</u> DETERMINE ACTUAL SENSOR COVERAGE BASED UPON A PLANNED EVENT LIST (OR OFFERED LIST) AND ACTUAL SENSOR SHOOTER DATA			X		X		SENSOR AND DCS EVALUATION FUNCTION	SATELLITE OPERATIONS PERSONNEL	SOFTWARE	OPERATIONS MANUAL TRAINING PROGRAM	NONE	VARIABLE PROCEDURE	AUTOMATED VS. MANUAL SENSOR COVERAGE FULFILLMENT DETERMINATION	SOFTWARE DEVELOPMENT			X				EP-6003		TW
14 2	<u>REPORT MISSION OPERATIONS AS REGARDS SENSOR COVERAGE</u> GENERATE A WRITTEN PERIODIC REPORT OF SENSOR COVERAGE BASED ON FULFILLED SENSOR COVERAGE.			X	X	X		SENSOR AND DCS EVALUATION FUNCTION	OPERATIONS PERSONNEL	SOFTWARE OPERATIONS MANUAL	OPERATIONS MANUAL	OFFERED VARIABLE PROCEDURE	VARIABLE PROCEDURE			X					GP-6006			
14.3	<u>UPDATE USER REQUEST FILE</u> BASED ON COVERAGE ACHIEVED, UPDATE USER REQUEST EVENT FILE			X	X	X		GROUND SCHEDULING FUNCTION	OPERATIONS PERSONNEL	SOFTWARE	OPERATIONS MANUAL	OFFERED VARIABLE PROCEDURE	VARIABLE PROCEDURE	SOFTWARE DEVELOPMENT			X				CP-5003		104	
14 4	<u>UPDATE ARCHIVAL FILES TO REFLECT SENSOR OPERATIONS</u> UPDATE THE MISSION HISTORY FILE BASED ON COMPLETED MISSION EVENTS			X	X	X		GROUND SCHEDULING FUNCTION	OPERATIONS PERSONNEL	SOFTWARE	OPERATIONS MANUAL	GUIDED VARIABLE PROCEDURE	VARIABLE PROCEDURE	SOFTWARE DEVELOPMENT			X						104	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO. 15 0 TITLE RECEIVE AND STORE REAL TIME VIDEO DATA GSFC. SPEC. PAR NO. 7 14 2 1		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.	
				A		B		A	B	A	B	A	B		A	B	N/A	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC.	SOFTWARE SPEC		PERSONNEL SPEC.
				SOFTWARE	MANUAL	SOFTWARE	MANUAL																		
FUNCTION NUMBER	FUNCTION REQUIREMENTS					A	B	A	B	A	B	A	B		A	B									
15 1	RECEIVE REAL TIME VIDEO THIS FUNCTION INCLUDES BUFFER AMPLIFICATION OF NSS/POI AT 15.4 MSPS AND R307/VIDEO AT 3.5 MHz BANDWIDTH	X				RTT/GDHS CABLE LINK	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	X					TRM			
15 2	DEMULTIPLEX NSS REAL TIME VIDEO OUTPUT WILL CONSIST OF 25 CHANNELS OF POI DATA AT APPROXIMATELY 505 KSPS	X				NIDE BAND DATA HANDLING EQUIPMENT	NONE	DME CONTROLS	NONE	NONE	NONE	NONE	NONE	NONE	NONE(NONE)	NONE	X					TRM			

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.				RESP.
		NO. 16.0		A		B											N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	CDMS SPEC DEF. SUBSET P-1250	SOFTWARE SPEC.	PERSONNEL SPEC.	
FUNCTION NUMBER	FUNCTION REQUIREMENTS	HARDWARE	SOFTWARE	HARDWARE	SOFTWARE	HARDWARE	SOFTWARE	A	B	A	B	A	B		A	B									
16.1	<u>RECEIVE DEMULTIPLEXED MSS DATA</u> ACCEPT DATA FROM DUE	X		X				WIDEBAND DATA HANDLING EQUIPMENT	WIDEBAND DATA HANDLING EQUIPMENT	NONE	NONE	NONE	NONE	NONE	NONE	NONE					X				TRM
16.2	<u>DISPLAY MSS DATA</u> DISPLAY DEMODULATED MSS DATA ON A-SCAN CRT.	X		X				A-SCAN CRT	A-SCAN CRT	SATELLITE OPERA- TIONS PERSONNEL	SATELLITE OPERA- TIONS PERSONNEL	NONE	NONE	NONE	NONE	NONE			X						TRM
16.3	<u>RECEIVE AND RECORD RAW VIDEO DATA</u> ACCEPT AND RECORD RAW DATA	X		X				UTROBAND DATA HANDLING EQUIPMENT	UTROBAND DATA HANDLING EQUIPMENT	NONE	NONE	NONE	NONE	NONE	NONE	NONE					X				TRM
16.4	<u>PROVIDE VIDEO SCAN CONVERSION</u> PERFORM SCAN CONVERSION ON RAW VIDEO	X		X				RAW SCAN CONVER- SION EQUIPMENT	RAW SCAN CONVER- SION EQUIPMENT	NONE	NONE	NONE	NONE	NONE	NONE	NONE					X				TRM
16.5	<u>SELECT DESIRED VIDEO DISPLAY</u> SELECT 1 OF 3 VIDEO SIGNALS FOR DISPLAY			X		X		VIDEO CROSSBAR SWITCHING UNIT CHANNEL SELECTOR	VIDEO CROSSBAR SWITCHING UNIT CHANNEL SELECTOR	SATELLITE OPERA- TIONS DIRECTOR	SATELLITE OPERA- TIONS DIRECTOR	FIXED PROCEDURE	FIXED PROCEDURE	NONE	NONE	NONE				X					TRM
16.6	<u>DISPLAY VIDEO IN RAW TIME OR REAR RAW TIME</u> DISPLAY RAW VIDEO ON CRT	X		X	X	X		SATELLITE OPERA- TIONS CONSOLE CRT VIDEO TIME RECORDER	SATELLITE OPERA- TIONS CONSOLE CRT VIDEO TIME RECORDER	MANUALLY-CON- TROLLED FRAME SELECT SWITCHES SERVING AUTO- MATIC SELECTION EQUIPMENT	MANUALLY-CON- TROLLED FRAME SELECT SWITCHES SERVING AUTO- MATIC SELECTION EQUIPMENT	FIXED PROCEDURE	FIXED PROCEDURE	FRAME IDENTIFICATION FOR PLAYBACK, AUTOMATED VIDEO MANUAL	DEVELOP AUTO- MATED SYSTEM DESIGN INCLUDING THIS SOFTWARE	NONE				X					TRM
16.7	<u>EVALUATE SENSOR PERFORMANCE</u> EVALUATE MSS DATA FOR QUALITY EVALUATE RAW IMAGES FOR QUALITY AND CLOUD COVER	X		X	X	X		SATELLITE OPERA- TIONS CONSOLE RAW CRT MSS A-SCAN CRT TECHNICAL SUPPORT SECTOR SPECIALIST EVALUATION AIDS	SATELLITE OPERA- TIONS CONSOLE RAW CRT MSS A-SCAN CRT TECHNICAL SUPPORT SECTOR SPECIALIST EVALUATION AIDS	SATELLITE OPERA- TIONS DIRECTOR OPERATIONS MANUAL	SATELLITE OPERA- TIONS DIRECTOR OPERATIONS MANUAL	OPEN END DECISION MAKING	OPEN END DECISION MAKING	NONE	NONE	NONE				X					TRM
16.8	<u>SPECIFY CORRECTIVE MEASURES</u> DETERMINE ACTION REQUIRED, IF NECESSARY, TO IMPROVE SENSOR OUTPUTS ON IMAGE QUALITY (MSS AND RAW)			X		X		SATELLITE OPERA- TIONS AND TECHNICAL SUPPORT PERSONNEL	SATELLITE OPERA- TIONS AND TECHNICAL SUPPORT PERSONNEL	OPERATIONS MANUAL	OPERATIONS MANUAL	OPEN END DECISION MAKING	OPEN END DECISION MAKING	NONE	NONE	NONE				X					TRM
16.9	<u>GENERATE MISSION LOOK REPORTS</u> MISSION LOOK REPORTS SHALL BE GENERATED REFLECTING ALL ASPECTS OF SENSOR MISSION PERFORMANCE			X		X		SATELLITE OPERA- TIONS AND TECHNICAL SUPPORT PERSONNEL	SATELLITE OPERA- TIONS AND TECHNICAL SUPPORT PERSONNEL	SATELLITE OPERA- TIONS PERSONNEL	SATELLITE OPERA- TIONS PERSONNEL	OPEN END DECISION MAKING	OPEN END DECISION MAKING	NONE	NONE	NONE				X					TRM

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.
		NO 17 6		A		B		A	B	A	B	A	B	A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC.	SOFTWARE SPEC.	PERSONNEL SPEC.		
		TITLE: PREPARE FRAME ANNOTATION DATA		HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL																		
		GSFC. SPEC. PAR. NO. 7 14 3 2 1/7 14 3 2 2																							
FUNCTION NUMBER	FUNCTION REQUIREMENTS																								
17 1	CORRELATE SATELLITE CLOCK AND GROUND TIME WITH TIME HISTORY			X				SOFTWARE	NONE	DATA BASE				NONE		COMPLETE SOFTWARE DEVELOPMENT	NONE			X			CP-1004		16M
17 2	DENSE ORBIT AND TIME DATA			X				SOFTWARE	NONE	DATA BASE				NONE		COMPLETE SOFTWARE DEVELOPMENT	NONE			X			CP-12005		16M
17 3	COMPUTE AND PLOT ATTITUDE DATA WITH TIME DATA			X				SOFTWARE	NONE	DATA BASE				NONE		COMPLETE SOFTWARE DEVELOPMENT	NONE			X			CP-12006		16M
17 4	EXTRACT PICTURE TIME, READ ORBIT/ATTITUDE DATA, COMPUTE SUN ANGLE, PICTURE CENTER AND BEARING			X				SOFTWARE	NONE	DATA BASE				ANALYTICAL VERSUS VECTOR METHODS		COMPLETE SOFTWARE DEVELOPMENT	NONE			X			CP-11001		16M
17 5	COMPUTE LOCATION OF TIDAL MARKS			X				SOFTWARE	NONE	DATA BASE				NONE		COMPLETE SOFTWARE DEVELOPMENT	NONE			X					16M
17 6	DENSE PIA FRAME ANNOTATION PARAMETERS			X				SOFTWARE	NONE	DATA BASE				NONE		COMPLETE SOFTWARE DEVELOPMENT	NONE			X			CP-12007		15M
17 7	GENERATE FRAME ANNOTATION DATA TAPES			X				SOFTWARE	NONE	DATA BASE				NONE		COMPLETE SOFTWARE DEVELOPMENT	NONE			X			CP-13007		16M
17 8	INITIALIZE INDEX/ABSTRACT FILE			X				SOFTWARE	NONE	DATA BASE				NONE		COMPLETE SOFTWARE DEVELOPMENT	NONE			X			CP-13000		16M

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO 10-B TITLE DETERMINE PRECISE SPACECRAFT ATTITUDE GSFC SPEC PAR. NO. 71431112		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.	
				A		B		A	B	A	B		A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC.	SOFTWARE SPEC.	PERSONNEL SPEC.			
				HARDWARE	SOFTWARE	MANUAL	HARDWARE																	SOFTWARE	MANUAL
FUNCTION NUMBER	FUNCTION REQUIREMENTS							A	B	A	B	A	B		A	B									
10-1	<u>FILTER EPHEMERIS AND ATTITUDE DATA</u> VERIFIED EPHEMERIS AND SPACECRAFT ATTITUDE DATA FILTERED TO OBTAIN BEST ESTIMATES OF POSN COORDINATES	X						SOFTWARE	NONE	DATA BASE	NONE			KALMAN VERSUS LEAST SQUARES	SOFTWARE DEVELOPMENT	NONE			X			CP-11000	TRM		
10-2	<u>MEASURE GROUND TRUTH</u>	X			X			SOFTWARE	SPECIALTY TRAINED PERSONNEL	DATA BASE	OPERATIONS MANUAL			HUMAN VERSUS SOFTWARE	COMPLETE SOFTWARE DEVELOPMENT	COMPLETE OPERA- TIONS AND TRAIN- ING PROCEDURES DEVELOPMENT			X			CP-11110	TRM		
10-3	<u>COMPUTE UPDATED ATTITUDE VALUES AND RATES</u>	X						SOFTWARE	NONE	DATA BASE	NONE			NONE	SOFTWARE DEVELOPMENT	NONE			X			P-11607	TRM		

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.		
		NO. 100		HARDWARE	SOFTWARE	MANUAL	HARDWARE	SOFTWARE	A	B	A	B	A		B	A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC. REF. AUGUST 8-1980		SOFTWARE SPEC.	PERSONNEL SPEC.
		TITLE BULK PROCESS RAW TAPE																								
		GSFC. SPEC. PAR. NO. 7.14.2.2																								
FUNCTION NUMBER	FUNCTION REQUIREMENTS																									
10 1	SELECT VIDEO TAPE TAPE IS LOADED IN, RELATED TO ANNOTATION DATA, AND PLACED IN PROCESSING QUEUE		X				NONE	NONE	NONE	NONE	FIXED PROCEDURE		NONE	NONE	NONE	NONE	X						3 4 2 1	ITER		
10 2	REFORMAT, RECORD ON HIGH DENSITY DIGITAL TAPE THE VIDEO TAPE IS DIGITIZED AND MERGED WITH ANNOTATION DATA TO PRODUCE A HIGH DENSITY DIGITAL FOR OPERATION OF LBR. ENTRY OF DATA INTO COMPUTER, PRODUCTION OF COMPUTER READABLE TAPES FOR USPS, AND ARCHIVAL FILMS	X	X				APPEX VTR/A, 8MM PROCESS LINE CON- TROL UNIT, HIGH DENSITY TAPE CON- TROL UNIT, HIGH DENSITY TAPE DRIVE UNIT	NONE	NONE	NONE			NONE	RAW & V, HDTU, AND HDTU MUST BE DEVELOPED	NONE	X						3 3 1 1 3 1 1 3 3 1 1 3 1 1 3 3 1 1 3 1 4 3 3 1 1 3 2 2			10M	
10 3	DUPLICATE DIGITAL TAPE IF UNCORRECTED COMPUTER READABLE TAPES ARE REQUIRED BY USERS, THEY ARE MADE AT THIS POINT BY DUPLICATING THE HIGH DENSITY TAPE ONTO STANDARDIZED TAPE	X					HIGH DENSITY TAPE CONTROL UNIT, HIGH DENSITY TAPE DRIVE UNIT, 1600 BPI TAPE READER	NONE	NONE	NONE			NONE	HDTU AND HDTU MUST BE DE- VELOPED	NONE	X						3 3 1 1 3 1 4 3 3 1 1 3 2 2			10M	
10 4	RECORD ON FILM THE IMAGE DATA IS RECORDED ON FILM WITH GEOGRAPHIC TICK MARKS AND GRAY SCALES, FROM THE HIGH DENSITY TAPE TO THE LBR	X					HDTU, HDTU, LBR	NONE	NONE	NONE			NONE	HDTU AND HDTU MUST BE DE- VELOPED, CURRENT LBR DESIGN MUST BE MODIFIED	NONE	X						3 3 1 1 3 1 4 3 3 1 1 3 2 2			10M	
10 5	ADD ALPHABETIC TEXT THE ALPHABETIC PART OF THE ANNOTATION IS ADDED AT A CRT STATION INTEGRATED INTO THE LBR	X					EXOD VERSAMAT	NONE	NONE	NONE			NONE	LBR MUST BE MODI- FIED TO ENCO- PORATE OR ADD ON THE CRT STATION	NONE	X						3 3 1 1 3 2 3 a1			10M	
10 6	PHOTO PROCESS STATIONS 9 & 4 PROCESSING OF LBR OUTPUT, FOR DUPLICATION OF THIS PRODUCT (BULK 1) FURTHER PRINTING AND PROCESSING IS DONE IN THE PHOTO LAB.	X						NONE	NONE	NONE	VARIABLE PROCEDURE		NONE	NONE	NONE	X									ITER	
10 7	SCREEN, ESTIMATE CLOUD COVER ONE CHANNEL OF EACH SET IS CHECKED FOR CLOUD COVER. CLOUD COVER RECORDED ON TAPES FOR EACH INFLUENT. IMAGES WITH LESS THAN 50% CLOUD FREE AREA ARE NOT FURTHER PROCESSED	X	X				COMPUTER, EN- CODER, DATA LOGGER, COMPUTER I/O STATION	NONE	NONE	NONE	VARIABLE PROCEDURE		NONE	NONE	NONE	X							3 1 2 4	3 4 2 1	ITER	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO. 19.0 TITLE: MILK PROCESS KEY TAPES (CONTINUE) GSFC. SPEC. PAR NO. 7.14.3.2		PROCESS ALLOCATION		DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.				
				A	B																						
				HARDWARE	SOFTWARE																			MANUAL	HARDWARE	SOFTWARE	MANUAL
FUNCTION NUMBER	FUNCTION REQUIREMENTS							A	B	A	B		A	B	N. A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDS SPEC NOT ELABORATED	SOFTWARE SPEC.	PERSONNEL SPEC.					
19.8	<u>MEASURE RESERV</u> RESERV POINT POSITIONS ARE MEASURED IN THE COMPUTER BY DIGITAL CORRELATION ALGORITHM			X				NONE	NONE	NONE	NONE		NONE	NONE	NONE	X						CP-14006		19H			
19.9	<u>SELECT ALTITUDE DATA</u> ALTITUDE DATA FOR KEYSTONE CORRECTION IS TAKEN FROM AEROSTATION TAPE			X				NONE	NONE	NONE	NONE		NONE	NONE	NONE	X						CP-14006		19H			
19.10	<u>COMPUTE COORDINATE TRANSFORMATION</u> RESERV AND ALTITUDE DATA ARE USED TO PREPARE CORRECTION INSTRUCTIONS FOR PPR			X				NONE	NONE	NONE	NONE		NONE	NONE	NONE	X						CP-1101		19H			
19.11	<u>PREPARE CORRECTED COPIES</u> THE COMPUTER PREPARES ABOUT 6000 INSTRUCTIONS WHICH CONTROL THE OPERATION OF THE PPR TO PRODUCE OPTICAL CORRECTIONS ON THE OUTPUT IMAGE. POSITIONING IS OPTICAL AND IS EQUIVALENT TO A PERMISSIVE BILINEAR POINT INTERPOLATION IMPLEMENTATION OF THE CORRECTION TRANSFORMATION FUNCTION			X	X			PRECISION PHOTO RESTITUTION (PPR)	NONE	NONE	NONE		NONE	PPR MUST BE DE- VELOPED, BUT ALL ITS BASIC PRO- TIONS HAVE BEEN DEVELOPED IN OTHER MAGNITIES	NONE	X	*				3 1 1 3 5 CP-19006		ITEK				
19.12	<u>UPDATE ALPHANUMERIC TEXT</u> A KEY STATION UNIT IS AN INTEGRAL PART OF THE PPR EXPOSES NEW AEROSTATION TEXT. THIS WILL DIFFER FROM THAT IN 19.8 BY INTRODUCING PROCESSING LEVEL, GIVING CLOUD COVER DATA, AND ANY OTHER NECESSARY CHANGES			X	X			PPR	NONE	NONE	NONE		NONE	IMAGING OF CRT TO PPR	NONE	X	*				3 1 1 3 5 CP-15605		ITEK				
19.13	<u>PREPARE COMPOSITE COLOR MASTER</u> THIS IS PREPARED ON THE PPR IN SAME MANNER THAT BLACK AND WHITE COPIES ARE MADE. EXCEPT THAT SUCCESSIVE CHANNELS ARE EXPOSED THROUGH COLOR SEPARATION FILTERS INTO COLOR FILM			X	X			PPR	NONE	NONE	NONE		NONE	SAME AS 19.11	NONE	X	*				3 1 1 3 5 CP-15001		ITEK				
19.14	<u>UPDATE ALPHANUMERIC TEXT</u> ALPHANUMERIC TEXT IS UPDATED AS IN 19.12, TEXT IS APPLIED IN ONLY ONE COLOR			X	X			PPR	NONE	NONE	NONE		NONE	SAME AS 19.12	NONE	X	*				3 1 1 3 5 CP-15001		ITEK				
																							* INSPECTION IS DONE AFTER PHOTO PROCESSING IN THE PHOTO LAB CP-15001				

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO 20 0 TITLE <u>BULK PROCESS MSS TAPES</u> GSFC. SPEC. PAR. NO <u>7 14 3 2</u>		PROCESS ALLOCATION		DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.		RESP.
				A		B		A	B	A	B	A	B	N A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	CODES SPEC. NOT SPECIFIED	SOFTWARE SPEC.	PERSONNEL SPEC.	
				HARDWARE	SOFTWARE	HARDWARE	SOFTWARE															
FUNCTION NUMBER	FUNCTION REQUIREMENTS																					
20 1	<u>SELECT VIDEO TAPE</u> TAPE IS LOADED IN, RELATED TO ANNOTATION DATA, AND PLACED IN PROCESSING QUEUE		X			NONE		NONE			FIXED PROCEDURE		NONE		NONE		X				3 4 21	ITER
20 2	<u>REFORMAT, RECORDED ON HIGH DENSITY DIGITAL TAPE</u> THE INPUT TAPE DATA ARE CHANGED TO COMPUTER RESEMBLE FORMAT, THE PARALLEL INPUT CHANNELS ARE SORTED TO PRODUCE 100 NAUTICAL MILE FRAMES OF DATA CORRESPONDING TO THE DSV FRAMES, EACH CHANNEL BEING RECORDED IN SEQUENCE. THE IMAGE DATA IS MERGED WITH ANNOTATION DATA, AND THE OUTPUT IS USED ANALOGOUSLY TO THAT OF 19 2	X	X			ANPEX VTR/D, MSS PROCESS LINE CON- TROL UNIT, WATCH, METER		NONE			VARIABLE PROCEDURE		NONE	MSSCU, MTRCU, AND MTRDN MUST BE DEVELOPED		X			3 3 1 1 3 3 3 3 3 1 1 3 1 2 3 3 1 1 3 1 4 3 3 1 1 2 2 2	3 4 21	IBM	
20 3	<u>DUPLICATE DIGITAL TAPE</u> SAME AS 19 3		X			MTRCU, CTRCU, 1600 RPM TAPE RECORDERS		NONE						WATCH AND MTRDN MUST BE DEVELOPED		X			3 3 1 1 3 1 4 3 3 1 1 2 2 2		IBM	
20 4	<u>RECORD ON FILM</u>					FUNCTIONS AND EQUIPMENTS IDENTICAL WITH 19 4, 19 5, 19 6																
20 5	<u>ADD ALPHANUMERIC TEXT</u>																					
20 6	<u>PHOTO PROCESS</u>																					
20 7	<u>SELECT ATTITUDE DATA</u> ATTITUDE DATA FOR MSS IN COMPUTING COORDINATE TRANSFORMATION IS TAKEN FROM THE ANNOTATION TAPE		X					NONE												CP-14005		
20 8	<u>COMPUTE COORDINATE TRANSFORMATION</u> ATTITUDE DATA ARE USED TO PREPARE CORRECTION INSTRUCTIONS FOR THE PPR		X					NONE												CP-15001		
20 9	<u>PREPARE CORRECTED COPIES</u>					FUNCTIONS AND EQUIPMENTS IDENTICAL WITH 19 11, 19 12				NONE			NONE			X					IBM	
20 10	<u>UPDATE ALPHANUMERIC TEXT</u>									NONE				NONE			X					IBM
20 11	<u>PREPARE COMPOSITE COLOR MASTERS</u> SAME AS 19 13, EXCEPT THAT TWO MASTERS ARE PREPARED TO DIFFERENT FALSE COLOR FORMULAS	X	X			PPR		NONE	NONE				NONE		SAME AS 19 12		X	(INSPECTION IS DONE AFTER PHOTO PROCESSING IN THE PHOTO LABS)			3 3 1 1 3 1 5 CP-15031	
20 12	<u>UPDATE ALPHANUMERIC TEXT</u> ALPHANUMERIC TEXT IS APPLIED IN ONLY ONE COLOR	X	X			PPR		NONE	NONE				NONE		SAME AS 19 11				3 3 1 1 3 1 5 CP-15001			

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.
		NO. 21.0 TITLE- PROCESS DCS DATA AND GENERATE MASTER DIGITAL TAPE GSFC. SPEC. PAR NO. 7 14 3 2 3/7 14 3 2 3	HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL	A	B	A	B	A	B		A	B	N.A. INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC.	SOFTWARE SPEC.	PERSONNEL SPEC.		
FUNCTION NUMBER	FUNCTION REQUIREMENTS																							
21 1	<u>CHECK DCS DATA QUALITY</u>		X			USS/MAGA TRAINED OPERATOR/ SUPERVISOR	NONE	N/A	NONE	OPEN END DECISION PAYING			NEED STRICT DEFINITION OF PROCEDURES	DEVELOPED FROM NONE	NONE	X					3 4 2 a)	IBM		
21 2	<u>EVALUATE DCS SENSOR STATUS</u> DETERMINE OPERATIONAL STATUS OF DCS SENSORS		X			CPU ROUTINE	NONE	N/A	NONE				CONSIDER MANUAL ALTERNATIVE	DEVELOP ROUTINES	NONE		X			QP-12015		IBM		
21 3	<u>SPECIFY CORRECTIONS AS REQUIRED</u> SPECIFY REMEDIAL PROCEDURES FOR DCS SENSORS WHOSE STATUS IS NON-OPTIMAL	X	X			7 OR 9 TRACK TAPE N/A IBM 729 VI CPU ROUTINE	NONE	SOFTWARE/CPU ROUTINE	NONE				EVALUATE USER/NEEDS REQUIREMENTS TO ESTABLISH FORMATS	DEVELOP FORMAT(S)	NONE		X			QP-12012		IBM		
21 4	<u>ADD CORRELATIVE DATA</u> CORRELATIVE DATA IS ANY SUPPLEMENTAL DATA GATHERED VIA OTHER LAND OR AIR BASED SENSORS OR PERSONNEL			X		CLEAR	NONE	MANUAL	NONE	VARIABLE PROCEDURE			ARCHIVAL PROCEDURES STUDY NONE	N/A	NONE	X					3 4 2 a)	IBM		
21 5	<u>IDENTIFY DCS TAPE</u>		X			SOFTWARE	NONE	DATA BASE	NONE				NONE	SOFTWARE DEVELOPMENT	NONE		X			QP-12016		IBM		
21 6	<u>MERGE PROCESSED PCM DATA</u>		X			SOFTWARE	NONE	DATA BASE	NONE				NONE	SOFTWARE	NONE		X			QP-12009		IBM		
21 7	<u>GENERATE MASTER DIGITAL TAPE</u>		X			SOFTWARE	NONE	DATA BASE	NONE				NONE	SOFTWARE	NONE		X			QP-12010		IBM		

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.		RESP.		
		NO. 22 0		SOFTWARE	MANUAL	SOFTWARE	MANUAL	A	B	A	B	A	B		A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	CIDS SPEC. REF. 13002 CP-13003		SOFTWARE SPEC.	PERSONNEL SPEC.
		TITLE PROCESS USER INPUTS TO ARCHIVAL FILES																							
		GSFC. SPEC. PAR. NO. 7 14 3 1 2																							
FUNCTION NUMBER	FUNCTION REQUIREMENTS																								
22 1	<u>ANALYZE AND CLASSIFY USER INPUTS DETERMINE HANDLING REQUIREMENTS</u>	X	X			MANUAL S/W AIDS	NONE	MANUAL	NONE	OPEN ENV DECISION MAKING		IF FORM OF INFORMATION IS GIVEN - ANALYST WILL HAVE TO REVIEW EACH INPUT - ABSTRACT AND FORMAT CAN ALL DATA BE PUT INTO A STANDARD, STORAGE FORM? LIST TYPE OF WAYS CONSIDERED AND SELECTIONS TYPE AND CLASSES OF ANNOTATION ACCEPTABLE	FILTERING TECH- NIQUE EDITING PRO- CEDURE	NONE	X					CP-13002 CP-13003	3 4 2a)	184			
22 2	<u>ABSTRACT USER INPUTS FOR STORAGE</u>	X	X			MANUAL INPUT DEVICES	NONE	MANUAL	NONE	VARIABLE PROCEDURE		CUSTOM CONSIDERATION REQUIREMENTS TO HANDLE LARGE VOLUME INPUTS AND NON-STANDARD DATA HANDLING REQUIREMENTS	FORMAT	NONE	X					CP-13031	3 4 2a)	184			
22 3	<u>RELATE USER DATA WITH STORED DATA</u>	X	X			MANUAL S/W AIDS	NONE	MANUAL	NONE	VARIABLE PROCEDURE		ESTABLISHMENT OF ASSOCIATED DATA FILE TO CORRESPOND TO TYPE OF INFORMATION TO BE RECEIVED METHOD OF RELATING DATA TO FILE RECORD	PROCEDURE	NONE	X					CP-13003	3 4 2a)	184			
22 4	<u>TRANSMIT THE DATA FOR STORAGE IN ASSOCIATED FILE</u>	X	X	X		MANUAL S/W ROUTINES REGARDING AND INPUT DEVICES	NONE	MANUAL	NONE	VARIABLE PROCEDURE		TRANSCRIPTION PROCESS - WHAT DATA WILL ACTUALLY BE STORED	PROCEDURE	NONE	X				3 3 3	CP-13011	3 4 2 a)	184			
22 5	<u>UPDATE ASSOCIATE DATA FILE</u>	X	X			MANUAL S/W ROUTINE	NONE	MANUAL S/W	NONE	FIXED PROCEDURE		TECHNIQUE OF UPDATING	FORMAT	X	X					CP-13032	3 4 2 e)	184			

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO. 23 0 TITLE GENERATE AND MAINTAIN ARCHIVAL FILES GSFC. SPEC. PAR. NO. 7 14 3 1 2/7 14 3 1		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.																
				A														B																							
				HARDWARE	SOFTWARE	MANUAL	HARDWARE											SOFTWARE	MANUAL	HARDWARE	SOFTWARE					MANUAL	HARDWARE	SOFTWARE	MANUAL	HARDWARE	SOFTWARE	MANUAL	HARDWARE	SOFTWARE	MANUAL	HARDWARE	SOFTWARE	MANUAL	HARDWARE	SOFTWARE	MANUAL
FUNCTION NUMBER	FUNCTION REQUIREMENTS																																								
23 1	LOG IN AND IDENTIFY DATA			X	X	X			MANUAL STORAGE DEVICES S/W PROGRAM	NONE	S/W/MANUAL	NONE	FIXED PROCEDURE		STORAGE VOLUME VERSUS USEFULNESS FORM OF ASSOCIATED DATA RESERVE OF DATA REDEMPTION ALLOWABLE ASSOCIATED DATA	POLICY PROCEDURE	NONE		X				3 3 3	CP-13003	3 4 2r)	10A															
23 2	STORE DATA			X		X			INPUT DEVICES MANUAL	NONE	MANUAL	NONE	FIXED PROCEDURE		TYPE OF ENTRY INFORMATION REQUIRED MANUAL VERSUS S/W ACCESS AND USE OF DATA	PROCEDURE FORMAT	NONE		X				3 3 3		3 4 2r)	10B															
23 3	SERVICE DATA REQUEST			X	X	X			MANUAL S/W AIDS STORAGE DEVICES	NONE	MANUAL S/W AIDS	NONE	FIXED PROCEDURE		FORM OF STORAGE, VOLUME AIDS PROCEDURES BACKUP PROCEDURES DATA RELIABILITY DATA SECURITY	POLICY PROCEDURES	NONE		X				3 3 3	CP-13006 CP-12003	3 4 2r)	10B															
23 4	SEARCH FILE FOR DATA				X	X			MANUAL S/W AIDS	NONE	MANUAL S/W AIDS	NONE	VARIABLE PROCEDURE		STORAGE OF NON-STANDARD IN- FORMATION AND MATERIAL (LARGE REPORTS, MARKED- UP PHOTOS)	PROCEDURES	NONE		X				3 3 3	CP-13003	3 4 2 r)	10A															
23 5	LOG OUT, LABEL AND TRANSMIT DATA			X	X				DISPLAYS S/W PROGRAM	NONE	MANUAL/S/W	NONE			STRUCTURING VS FLEXIBILITY & USEFULNESS INFORMATION DISPLAY S/W VERSUS MANUAL PARAMETERS TO RETRIEVE ON WHAT INFORMATION IS IDENTIFIED? AND GETS OUTPUT? MANUAL VERSUS S/W AIDS	ESTABLISH REQUIREMENTS S/W PROGRAMS	NONE		X				3 3 3	CP-13021		10A															
23 6	MAINTAIN ASSOCIATED DATA RECORD				X	X			MANUAL S/W AIDS	NONE	MANUAL	NONE	FIXED PROCEDURE		NONE	PROCEDURE S/W AIDS	NONE		X				3 3 3	CP-13010	3 4 2r)	10B															
23 7	UPDATE ASSOCIATED DATA			X		X			MANUAL COMMUNICATION MEDIA REPRODUCTION DEVICES DISPLAY	NONE	MANUAL	NONE	VARIABLE PROCEDURE		S/W AIDS TO GENERATE WORK INLINES FOR REPRODUCTION REQUIREMENTS USER INTERFACE REQUIREMENTS	PROCEDURES FORMAT	NONE		X				3 3 1 1 3 6		3 4 2r)	10B															

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION		DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.			
		NO. 24 0	TITLE: PREPARE PRECISE FRAME ANNOTATION DATA																						
		GSFC. SPEC. PAR. NO. 7 14 3 2 1/2 14 3 2 2		HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL	A	B	A	B	A	B		A	B	N. A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC	SOFTWARE SPEC.	PERSONNEL SPEC	
FUNCTION NUMBER	FUNCTION REQUIREMENTS																								
24 1	SELECT FRAME ANNOTATION DATA AND PRECISE SPACECRAFT ATTITUDE. SELECT DATA RELATING TO FRAME TO BE SPECIAL PROCESSED		X			X	SPECIAL FRAME ANNOTATION SOFTWARE	SPECIALLY TRAINED PERSONNEL	SOFTWARE DATA BASE	OPERATIONS MANUAL AND TRAINING PRO- GRAM		OPEN END DECISION PROCESS	NONE	COMPLETE SOFTWARE DEVELOPMENT	COMPLETE OPERA- TIONS AND TRAIN- ING PROCEDURES DEVELOPMENT			X				CP-14019 CP-14020	3 4 2 r)	TRM	
24 2	VERIFY DCS AVAILABILITY		X			X	SPECIAL SOFTWARE	SPECIALLY TRAINED PERSONNEL	SOFTWARE DATA BASE	OPERATIONS MANUAL AND TRAINING PRO- GRAM		VARIABLE PROCEDURE	MANUAL/SOFTWARE	COMPLETE SOFTWARE DEVELOPMENT	COMPLETE OPERA- TIONS AND TRAIN- ING PROCEDURES DEVELOPMENT			X				CP-12012	3 4 2 r)	TRM	
24 3	UPDATE SUBOPTICAL POINT, PICTURE CENTER, AND BEARING		X			X	SPECIAL SOFTWARE	SPECIALLY TRAINED PERSONNEL	SOFTWARE DATA BASE	NONE		VARIABLE PROCEDURE	NONE	COMPLETE SOFTWARE DEVELOPMENT	COMPLETE OPERA- TIONS AND TRAIN- ING PROCEDURES DEVELOPMENT			X				CP-12007	3 4 2 r)	TRM	
24 4	COMPLETE UPDATED TICK MARK LOCATIONS COMPUTED FROM PRECISE ATTITUDE INFORMATION		X				SPECIAL SOFTWARE	N/A	SOFTWARE DATA BASE	N/A		NONE	COMPLETE SOFTWARE DEVELOPMENT	N/A				X				CP-14020		TRM	
24 5	MERGE FRAME ANNOTATION, PRECISE ATTITUDE AND ARCHIVAL DATA ASSEMBLY OF UPDATED AND CURRENT DATA IN PREPARATION OF TAPE GENERATION		X				SOFTWARE	NONE	DATA BASE	NONE		NONE	NONE	NONE	NONE			X				CP-12003		TRM	
24 6	GENERATE SPECIAL FRAME ANNOTATION TAPE		X				FORMATTING SOFTWARE	NONE	DATA BASE	NONE		NONE	NONE	COMPLETE SOFTWARE DEVELOPMENT	NONE			X				CP-14020		TRM	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION		DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.		RESP.				
		NO. 25 0		HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL	A	B	A	B	A	B		A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC. REF. NUMBER E-1309	SOFTWARE SPEC.	PERSONNEL SPEC.	
		TITLE: PROCESS IN PHOTO LABORATORY																							
		GSFC SPEC. PAR. NO. 214.212																							
FUNCTION NUMBER	FUNCTION REQUIREMENTS																								
25 1	<u>RECEIVE MASTER COPIES</u> EXPOSED BUT UNPROCESSED MASTER COPIES ARE RECEIVED FOR THEM AS COPIES OF BOTH BLACK AND PRECISION PROCESSING AND IN BOTH BLACK AND WHITE AND COLOR		X			NONE		NONE		VARIABLE PROCEDURE		NONE			X									3 4 2 1)	ITEK
25 2	<u>PROCESS (BLACK AND WHITE)</u> STANDARD PHOTO PROCESSING	X				EXCO VERSAMAT		NONE				NONE			X							3 3 1 1 3 2 3 a)			ITEK
25 3	<u>PRINT INTERPRETATIVES</u> INTERPRETATIVES WILL BE NECESSARY IN SOME CHAINS TO PROVIDE FOR REPLICATION OF FAIRLY LARGE NUMBERS OF OUTPUT PRODUCTS OF POWER TYPE	X				LOGISTRONIC PRINTER MODEL SP-1070		NONE				NONE			X							3 3 1 1 3 2 3 c)			ITEK
25 4	<u>PROCESS (BLACK AND WHITE)</u> SAME AS 25.2																								
25 5	<u>MAKE PAPER PRINTS</u> ONE OF THE REQUIRED OUTPUT PRODUCTS	X				LOGISTRONIC PRINTER MODEL SP-1070		NONE				NONE			X							3 3 1 1 3 2 3 c)			ITEK
25 6	<u>PROCESS PAPER (BLACK AND WHITE)</u> STANDARD PAPER PRINT PROCESSING	X				EXCO VERSAMAT		NONE				NONE			X							3 3 1 1 3 2 3 a)			ITEK
25 7	<u>MAKE FILM DUPLICATES</u> POSITIVE TRANSPARENCIES ARE ANOTHER OUTPUT PRODUCT	X				LOGISTRONIC PRINTER, MODEL SP-1070		NONE				NONE			X							3 3 1 1 3 2 3 c)			ITEK
25 8	<u>PROCESS (BLACK AND WHITE)</u> SAME AS 25 2																								
25 9	<u>PRINT DISTRIBUTION NEGATIVES</u> NEGATIVE TRANSPARENCIES ARE THE THIRD OUTPUT PRODUCT	X				EXCO VERSAMAT		NONE				NONE			X							3 3 1 1 3 2 3 a)			ITEK
25 10	<u>PROCESS (BLACK AND WHITE)</u> SAME AS 25 2																								
25 11	<u>PROCESS (COLOR)</u> STANDARD COLOR PROCESSING	X				EXCO COLOR VERSAMAT		NONE				NONE			X							3 3 1 1 3 2 3 b)			ITEK
25 12	<u>MAKE DISTRIBUTION COPIES</u>	X				LOGISTRONIC COLOR PRINTER MARK 111		NONE				NONE			X							3 3 1 1 3 2 3 d)			ITEK
25 13	<u>REVERSAL PROCESS (COLOR)</u> STANDARD OR REVERSAL PROCESSING CAN BE EMPLOYED DEPENDING ON OUTPUT PRODUCT DESIRED	X				EXCO COLOR VERSAMAT		NONE				NONE			X							3 3 1 1 3 2 3 b)			ITEK

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO. 20.0 TITLE: PRECISION PROCESS. RBY GSFC. SPEC. PAR. NO. 7.10.3.2.7		PROCESS ALLOCATION		DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.		RESP.				
				HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL	A	B	A	B	A	B		A	B	N. A.	INSPECTION	ANAL. DATA	DEMONST.		TEST	GDHS SPEC. NO. & SUBSYSTEM	SOFTWARE SPEC.	PERSONNEL SPEC.
FUNCTION NUMBER	FUNCTION REQUIREMENTS																								
26.1	SELECT REW TYPE PRECISION PROCESSING STARTS WITH ORIGINAL HIGH DENSITY TAPE PREPARED IN 19.2				X			NONE		NONE		FIXER PROCEDURE		NONE			X						184		
26.2	MEASURE RESEAU SAME FUNCTION AS 19.8				X			NONE		NONE				NONE			X					CP-14006		184	
26.3	COMPUTE COORDINATE TRANSFORMATION COORDINATE TRANSFORMATION IS COMPUTED FROM RESEAU MEASUREMENTS AND KNOWN ALTITUDE INFORMATION				X			NONE		NONE				NONE			X					CP-14016		184	
26.4	PERFORM GEOM ROUTINE THE COORDINATE TRANSFORMATION IS IMPLEMENTED POINT BY POINT WITHIN THE COMPUTER				X			NONE		NONE				NONE			X					CP-14017		184	
26.5	MAKE PHOTOMETRIC CORRECTIONS CORRECTIONS FOR RESPONSIVITY, GAMMA, SHADING AND DENSITIES ARE MADE WITHIN THE COMPUTER FOR EACH POINT				X			NONE		NONE				NONE			X					CP-14011		184	
26.6	PERFORM SPECIAL REQUEST PROCESSING COMPUTER ROUTINES FOR SPECIAL REQUEST PROCESSING (SUCH AS RESEAU REMOVAL) ARE RUN AT THIS TIME				X			NONE		NONE				NONE			X					CP-14009 CP-11000		184	
26.7	DUPLICATE DIGITAL TAPE THE COMBINED RESULTS OF THE FOREGOING PROCESSING ARE PUT ON TAPE FOR DRIVING THE LBN. IF A DIGITAL TAPE OUTPUT IS REQUESTED FOR DIS- TIBUTION, IT IS DUPLICATED AT THIS TIME				X			STANDARD MAG- NETIC TAPE RECORDER		NONE				NONE			X				COMMERCIAL OR UIC			184	
26.8	RECORD ON FILM SAME FUNCTION AS 19.4				X			SAME AS 19.4																	
26.9	ADD ALPHANUMERIC TEXT SAME FUNCTION AS 19.5				X			SAME AS 19.6																	
26.10	PHOTO PROCESS STANDARD BLACK AND WHITE PROCESSING IN PHOTO LAB				X			EXCO VERSAWAT		NONE				NONE			X				3311323 a1			11EX	
26.11	PREPARE COMPOSITE COLOR MASTER THE OUTPUT OF 26.3 IS PUT INTO THE FORM OF 19.10 AND USED TO DRIVE THE PPR IN THE SAME MODE AS 19.13				X	X		PPR		NONE				NONE			X			(VISUAL INSPECTION AFTER PROCESSING IN PHOTO LAB)		CP-15001		11EX	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.			PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.
		NO. 27 0	TITLE PRECISION PROCESS HWS	GSPC SPEC PAR. NO. 7 14 3 2 7	A	B	A	B	A	B	A	B	A	B		N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDS SPEC CP-11000	SOFTWARE SPEC.	PERSONNEL SPEC.		
FUNCTION NUMBER	FUNCTION REQUIREMENTS	HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL	A	B	A	B	A	B	A	B	A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDS SPEC CP-11000	SOFTWARE SPEC.	PERSONNEL SPEC.		
27 1	<u>CORRELATE HWS WITH RBY AND STORE ERROR SIGNALS</u> THE IMAGE FROM ONE CHANNEL OF THE ASS IS CORRELATED ON THE PFR WITH THE CORRESPONDING PRECISION PROCESSED RBY IMAGE. THE ERROR SIGNALS RESULTING FROM THE DIFFERENCES BETWEEN THE TWO ARE ENTERED INTO THE COMPUTER FOR USE IN THE NEXT STEP	X				PFR		NONE						NONE	PFR MUST BE DEVELOPED (cf 19.11)		X				3 3 1 1 3 1 5			1YER	
27 2	<u>COMPUTE IMPROVED ATTITUDE DATA</u> THE VIEW ANGLE AT THE TIME THAT THE RBY PICTURE HAS TAKEN CAN BE DEDUCED FROM THE ERROR SIGNALS. THIS IS COMBINED WITH ATTITUDE DATA FROM TB 0 TO COMPUTE AN IMPROVED SET OF ATTITUDE VALUES		X					NONE						NONE	NONE		X				CP-11000			10H	
27 3	<u>COMPUTE COORDINATE TRANSFORMATION</u> COORDINATE TRANSFORMATION IS COMPUTED IN THE SAME WAY AS IN 20 0		X					NONE						NONE	NONE		X				CP-11000			10H	
27 4	<u>PERFORM GEOM ROUTINE</u>																								
27 5	<u>PERFORM SPECIAL PROCESSING</u>																								
27 6	<u>DUPLICATE DIGITAL TAPE</u>																								
27 7	<u>RECORD ON FILM</u>																								
27 8	<u>ADD ALPHANUMERIC TEXT</u>																								
27 9	<u>PHOTO PROCESS</u>																								
27 10	<u>PREPARE COMPOSITE COLOR MASTERS</u> THE OUTPUT OF 27 2 IS PUT INTO THE FORM OF 29 0 AND USED TO DRIVE THE PFR IN THE SAME MODE AS 20 11	X	X			PFR		NONE						NONE	SAME AS 27 1			X			3 3 1 1 3 1 5 (VISUAL INSPECTION AFTER PROCESSING IN PHOTO LAB) CP-15001			1YER	

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PAGE NUMBER

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)			PARAGRAPH NOS.			RESP.	
		NO. 28.0	TITLE MONITOR FACILITY STATUS	HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL	A	B	A	B	A	B		A	B	N.A.	INSPECTION	ANAL DATA	DEMONSTR. TEST	GDHS SPEC	SOFTWARE SPEC		PERSONNEL SPEC
		GSFC. SPEC. PAR. NO.																						
FUNCTION NUMBER	FUNCTION REQUIREMENTS																							
28.1	<u>DETECT TRENDS - ANOMALIES</u> <u>FAIR ALARMS</u> AUTOMATIC FIRE SENSORS PROVIDE CONTINUOUS STATUS OF STATIONS <u>ELECTRICAL POWER FAILURE/STATUS INDICATOR</u> PROVIDES ELECTRICAL POWER STATUS TO RECORD TRANSIENTS OR OTHER ELECTRICAL VARIATIONS FOR DATA VERIFICATION <u>EQUIPMENT OVERHEAT ALARM</u> AUTOMATIC EQUIPMENT OVERHEAT SENSORS PROVIDE FOR WARNING TO PRESERVE DATA AND EQUIPMENT <u>AIR CONDITIONING FAILURE (TEMP & HUMIDITY)</u> TEMPERATURE AND HUMIDITY SENSORS INSURE AIR CONDITIONING IS ACCEPTABLE TO THE SYSTEM		X	X																				
	AUTOMATIC FIRE SENSORS PROVIDE CONTINUOUS STATUS OF STATIONS AUTOMATIC WITH MANUAL OVERRIDE (ALL SYSTEMS) AUTOMATIC ALARMS NONE NONE COSTING OF EXISTING SYSTEMS "OFF THE SHELF ITEMS" "OFF THE SHELF ITEMS" X CFE																							
	ELECTRICAL POWER FAILURE/STATUS INDICATOR PROVIDES ELECTRICAL POWER STATUS TO RECORD TRANSIENTS OR OTHER ELECTRICAL VARIATIONS FOR DATA VERIFICATION AUTOMATIC WITH MANUAL SWITCHING NONE FIXED PROCEDURE COSTING OF EXISTING SYSTEMS "OFF THE SHELF ITEMS" "OFF THE SHELF ITEMS" X CFE		X	X	X																			
	EQUIPMENT OVERHEAT ALARM AUTOMATIC EQUIPMENT OVERHEAT SENSORS PROVIDE FOR WARNING TO PRESERVE DATA AND EQUIPMENT AUTOMATIC WITH A/C SWITCHING NONE FIXED PROCEDURE COSTING OF EXISTING SYSTEMS "OFF THE SHELF ITEMS" "OFF THE SHELF ITEMS" X CFE		X	X	X																			
	AIR CONDITIONING FAILURE (TEMP & HUMIDITY) TEMPERATURE AND HUMIDITY SENSORS INSURE AIR CONDITIONING IS ACCEPTABLE TO THE SYSTEM AUTOMATIC SENSORS WITH CONTROLS VISUAL INDICATORS AND MANUAL CONTROL NONE FIXED PROCEDURE COSTING OF EXISTING SYSTEMS "OFF THE SHELF ITEMS" "OFF THE SHELF ITEMS" X CFE		X	X	X																			
28.2	<u>SEND ALARM SIGNALS</u> AUTOMATIC ALARMS TO ALERT STATION CONTROL OF TRENDS OR ANOMALIES		X	X	X																			
	AUTOMATIC ALARMS TO ALERT STATION CONTROL OF TRENDS OR ANOMALIES AUTOMATIC WITH MANUAL OVERRIDE (ALL SYSTEMS) VISUAL AND AUDIBLE ALARMS AUTOMATIC WITH MANUAL OVERRIDE (ALL SYSTEMS) NONE FIXED PROCEDURE COSTING OF EXISTING SYSTEMS "OFF THE SHELF ITEMS" "OFF THE SHELF ITEMS" X CFE																							
28.3	<u>DETERMINE SPECIFIC PROBLEM</u> DETERMINE IDENTIFICATION ON ALTERNATE PROCEDURE WHICH WILL BE ACTIVATED			X	X																			
	DETERMINE IDENTIFICATION ON ALTERNATE PROCEDURE WHICH WILL BE ACTIVATED OPERATIONS OFFICER OPERATIONS OFFICER VERIFY ALARM AND EVALUATE SPECIFIC PROBLEM RESOLVE OR SELECT ALTERNATE PROCEDURE VERIFY ALARM AND EVALUATE SPECIFIC PROBLEM RESOLVE OR SELECT ALTERNATE PROCEDURE OPEN END DECISION MAKING OPEN END DECISION MAKING N/A DEVELOPMENT OF EMERGENCY TRAINING AND PROCEDURES DEVELOPMENT OF EMERGENCY TRAINING AND PROCEDURES X CFE																							
28.4	<u>DETERMINE IMMEDIACY OF SITUATION</u> EVALUATE IMPACT OF SITUATION ON MISSION			X	X																			
	EVALUATE IMPACT OF SITUATION ON MISSION OPERATIONS OFFICER (OVERSIGHT OF AUTOMATIC SYSTEM) OPERATIONS OFFICER EVALUATE IMPACT OF PROBLEM ON SCHEDULED MISSION OBJECTIVE AND SAFETY OF STATION EVALUATE IMPACT OF PROBLEM ON SCHEDULED MISSION OBJECTIVE AND SAFETY OF STATION OPEN END DECISION MAKING OPEN END DECISION MAKING N/A DEVELOPMENT OF EMERGENCY AND ABORT PROCEDURES DEVELOPMENT OF EMERGENCY AND ABORT PROCEDURES X CFE																							
28.5	<u>NOTIFY PROPER PERSONNEL</u> DETERMINE AND SELECT PERSONNEL REQUIRED FOR CORRECTIVE ACTION			X	X																			
	DETERMINE AND SELECT PERSONNEL REQUIRED FOR CORRECTIVE ACTION OPERATIONS OFFICER (OVERSIGHT OF AUTOMATIC SYSTEM) OPERATIONS OFFICER ENGAGE PROPER STATION OR SUPPORT PERSONNEL INTO A RESPONSE MODE ENGAGE PROPER STATION OR SUPPORT PERSONNEL INTO A RESPONSE MODE OPEN END DECISION MAKING OPEN END DECISION MAKING N/A DEVELOPMENT OF A STATION EMERGENCY SOP DEVELOPMENT OF A STATION EMERGENCY SOP X CFE																							
28.6	<u>SPECIFY AND PERFORM CORRECTIVE ACTIONS</u> <u>FIRE SUPPRESSION</u> FOLLOW EMERGENCY PLAN <u>ELECTRICAL POWER ALTERNATE SELECTION</u> ACTIVATE ELECTRICAL SHUT-DOWN PROCEDURE OR ALTERNATE EQUIPMENT PROCEDURE <u>EQUIPMENT OVERHEAT CORRECTION OR ALTERNATE</u> DEACTIVATE EQUIPMENT AND ACTIVATE EMERGENCY PLAN <u>AIR CONDITIONING FAILURE CORRECTION</u> ACTIVATE EMERGENCY AIR CONDITIONING PLAN		X	X	X																			
	FOLLOW EMERGENCY PLAN OPERATIONS OFFICER (OVERSIGHT OF AUTOMATIC SYSTEM) OPERATIONS OFFICER DIRECT AND COORDINATE THE PERSONNEL AND EQUIPMENT DIRECT AND COORDINATE THE PERSONNEL AND EQUIPMENT OPEN END DECISION MAKING OPEN END DECISION MAKING N/A DEVELOPMENT OF EMERGENCY AND ABORT PROCEDURES DEVELOPMENT OF EMERGENCY AND ABORT PROCEDURES X CFE																							
	ELECTRICAL POWER ALTERNATE SELECTION OPERATIONS OFFICER (OVERSIGHT OF AUTOMATIC SYSTEM) OPERATIONS OFFICER ACTIVATE ELECTRICAL SHUT-DOWN PROCEDURE OR ALTERNATE EQUIPMENT PROCEDURE ACTIVATE ELECTRICAL SHUT-DOWN PROCEDURE OR ALTERNATE EQUIPMENT PROCEDURE OPEN END DECISION MAKING OPEN END DECISION MAKING N/A DEVELOPMENT OF EMERGENCY AND ABORT PROCEDURES DEVELOPMENT OF EMERGENCY AND ABORT PROCEDURES X CFE		X	X	X																			
	EQUIPMENT OVERHEAT CORRECTION OR ALTERNATE DEACTIVATE EQUIPMENT AND ACTIVATE EMERGENCY PLAN OPERATIONS OFFICER (OVERSIGHT OF AUTOMATIC SYSTEM) OPERATIONS OFFICER DEACTIVATE EQUIPMENT AND ACTIVATE EMERGENCY PLAN DEACTIVATE EQUIPMENT AND ACTIVATE EMERGENCY PLAN OPEN END DECISION MAKING OPEN END DECISION MAKING N/A DEVELOPMENT OF EMERGENCY AND ABORT PROCEDURES DEVELOPMENT OF EMERGENCY AND ABORT PROCEDURES X CFE		X	X	X																			
	AIR CONDITIONING FAILURE CORRECTION ACTIVATE EMERGENCY AIR CONDITIONING PLAN OPERATIONS OFFICER (OVERSIGHT OF AUTOMATIC SYSTEM) OPERATIONS OFFICER ACTIVATE EMERGENCY AIR CONDITIONING PLAN ACTIVATE EMERGENCY AIR CONDITIONING PLAN OPEN END DECISION MAKING OPEN END DECISION MAKING N/A DEVELOPMENT OF EMERGENCY AND ABORT PROCEDURES DEVELOPMENT OF EMERGENCY AND ABORT PROCEDURES X CFE		X	X	X																			
28.7	<u>VERIFY CORRECTIVE ACTION</u> ESTABLISH FACT THAT STATION HAS RETURNED TO STANDARD OPERATIONS			X	X																			
	ESTABLISH FACT THAT STATION HAS RETURNED TO STANDARD OPERATIONS OPERATIONS OFFICER OPERATIONS OFFICER INSURE THAT SYSTEMS ARE RETURNED TO FACILITIES STANDARD INSURE THAT SYSTEMS ARE RETURNED TO FACILITIES STANDARD OPEN END DECISION MAKING OPEN END DECISION MAKING N/A DEVELOPMENT OF EMERGENCY AND ABORT PROCEDURES DEVELOPMENT OF EMERGENCY AND ABORT PROCEDURES X CFE																							
28.8	<u>UPDATE FACILITIES STATUS LOG</u> RECORD INCIDENT AND PROVIDE HISTORY OF CORRECTIVE ACTION AND REQUIREMENTS TO PREVENT RECURRENCE			X	X																			
	RECORD INCIDENT AND PROVIDE HISTORY OF CORRECTIVE ACTION AND REQUIREMENTS TO PREVENT RECURRENCE OPERATIONS OFFICER OPERATIONS OFFICER RECORD INCIDENT AND PROVIDE HISTORY OF CORRECTIVE ACTION TO PREVENT RECURRENCE OF LIKE SITUATION RECORD INCIDENT AND PROVIDE HISTORY OF CORRECTIVE ACTION TO PREVENT RECURRENCE OF LIKE SITUATION OPEN END DECISION MAKING OPEN END DECISION MAKING N/A DEVELOPMENT AND MAINTAIN STATION STATUS LOG DEVELOPMENT AND MAINTAIN STATION STATUS LOG X CFE																							

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.	
		NO. 29 0																								
		TITLE: VERBURN SPACECRAFT SIMULATION																								
		GSFC SPEC. PAR. NO. Section 7.14.2.2 f																								
FUNCTION NUMBER	FUNCTION REQUIREMENTS	HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL	A	B	A	B	A	B	A	B	A	B	A	B	N. A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC.	SOFTWARE SPEC.	PERSONNEL SPEC.	
29 1	<u>GENERATE SQUARE WAVE SIGNAL</u> USING A SQUARE WAVE GENERATOR, GENERATE AN RS232C TYPE SIGNAL AT 14 0 MB/S FOR MODULATION OF ONE OF THE S-BAND KIDBOARD TRANSMITTERS	X	X			COMMERCIAL TEST EQUIPMENT		EQUIPMENT OPERATIONS MANUAL		FIXED PROCEDURE				NONE		NONE (COMMERCIAL)				X						TR4
29 2	<u>GENERATE A SINEWAVE SIGNAL</u> USING A VIDEO OSCILLATOR, GENERATE A MANUALLY SINEPT SIGNAL FOR MODULATION OF ONE OF THE S-BAND KIDBOARD TRANSMITTERS.	X	X			COMMERCIAL TEST EQUIPMENT		EQUIPMENT OPERATIONS MANUAL		FIXED PROCEDURE				NONE		NONE (COMMERCIAL)				X						TR4
29 3	<u>TRANSMIT VIDEO SIGNAL</u> TRANSMIT EACH VIDEO SIGNAL TO THE RECEIVING STATION BY WAY OF ITS OWN S-BAND TRANSMITTER	X	X			SIMULATOR/SC HARDWARE		EQUIPMENT OPERATIONS MANUAL		FIXED PROCEDURE				NONE		NONE (SPACECRAFT HARDWARE)					X					TR4
29 4	<u>INITIATE DCS TEST</u> PLAYBACK A TEST TAPE INTO THE SIMULATOR BASEBAND ASSEMBLY UNIT, CONTAINING PRE-RECORDED DCS SIGNALS	X	X			SIMULATOR TAPE RECORDER		EQUIPMENT OPERATIONS MANUAL		FIXED PROCEDURE				NONE		NONE (COMMERCIAL)			X							TR4
29 5	<u>RECEIVE AND DEMODULATE WAVE SIGNAL</u> RECEIVE AND DEMODULATE THE PWR RANGE SIGNAL FOR RETRANSM BACK TO THE MSN STATION	X				SIMULATOR/SC HARDWARE								NONE		NONE (SPACECRAFT HARDWARE)		X								TR4
29 6	<u>RECEIVE AND CONTROL S-BAND CARRIER</u> RECEIVE THE KSTN S-BAND UPLINK CARRIER AND CORRECTLY CONTROL THE SIMULATOR DOWNLINK CARRIER FOR RANGE RATE	X				SIMULATOR/SC HARDWARE								NONE		NONE (SPACECRAFT HARDWARE)					X					TR4
29 7	<u>INITIATE S/C HOUSEKEEPING AND TLM TEST</u> PLAYBACK A PLAYBACK A TEST TAPE INTO THE SIMULATOR BASEBAND ASSEMBLY UNIT, CONTAINING SPACECRAFT HOUSEKEEPING TELEMETRY AT 1 AND 32 KB'S RATE AS FOLLOWS 1 KB 166 KHz, 285 KHz AND 1 25 MHz 32 KB 300 KC	X	X			SIMULATOR TAPE RECORDER		EQUIPMENT OPERATIONS MANUAL		FIXED PROCEDURE				NONE		NONE (COMMERCIAL)			X							TR4

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.		
		NO. 29 0		HARDWARE	SOFTWARE	MANUAL	HARDWARE	SOFTWARE	A	B	A	B	A	B		A	B	N. A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC.	SOFTWARE SPEC.	PERSONNEL SPEC.	
		TITLE: PERFORM SPACECRAFT SIMULATION (CONTINUED)																								
		GSFC. SPEC. PAR. NO.																								
FUNCTION NUMBER	FUNCTION REQUIREMENTS																									
29 0	TRANSMIT S-BAND TRANSMIT THE COMPOSITE TELEMETRY, DCS AND WHEN BEHEED THE FOR SEQUENCE TO THE MSFN STATION USING THE S-BAND TRANSMITTER		X					SIMULATOR/SC HARDWARE							NONE	NONE (SPACECRAFT HARDWARE)					X					TM
29 9	TRANSMIT VHF TRANSMIT SPACECRAFT TELEMETRY AT EITHER 10/S OR 32 10/S ONE AT A TIME TO THE STADAN STATION USING THE VHF TRANSMITTER		X					SIMULATOR/SC HARDWARE							NONE	NONE (SPACECRAFT HARDWARE)					X					TM
29 10	RECEIVE VHF COMMANDS RECEIVE COMMANDS FROM THE STADAN STATIONS VIA THE VHF LINK		X					SIMULATOR/SC HARDWARE							NONE	NONE (SPACECRAFT HARDWARE)		X								TM
29 11	RECEIVE S-BAND COMMANDS RECEIVE COMMANDS FROM THE MSFN STATIONS VIA THE S-BAND LINK		X					SIMULATOR/SC HARDWARE							NONE	NONE (SPACECRAFT HARDWARE)		X								TM
29 12	MODULATE AND DISPLAY COMMANDS MODULATE AND DISPLAY THESE COMMANDS FOR VISUAL VERIFICATION		X	X				SIMULATOR HARDWARE		EQUIPMENT OPERATIONS MANUAL		FIXED PROCEDURE		MODIFY AN OLD DESIGN VERSUS A NEW DESIGN	STRAIGHTFORWARD BASELINE DESIGN		X									TM

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.	
		NO	30 0	HARDWARE	SOFTWARE	HARDWARE	SOFTWARE										N. A.	INSPECTION	ANAL. DATA	DEMONST.					TEST
		TITLE: TEST OOC SEGMENT READINESS																							
		GSFC SPEC PAR. NO.																							
FUNCTION NUMBER	FUNCTION REQUIREMENTS								A	B	A	B	A	B		A	B								
30 1	VERIFY NUCSON READINESS VERIFY ALL DATA LINKS BETWEEN THE OOC AND THE STADAN/MSFN/NTTF STATIONS BY MONITORING REMOTE GENERATED SIGNALS RECEIVED AT THE OOC		X	X	X	X	DATA LINKS TEST EQUIPMENT TECHNICIAN	DATA LINKS TEST EQUIPMENT TECHNICIAN	READINESS TEST PROCEDURE	READINESS TEST PROCEDURE	FIXED PROCEDURE	FIXED PROCEDURE	NONE	NONE	NONE				X				TRW		
30 2	VERIFY VOICE AND TTY CONTACT WITH APPROPRIATE MSFN OR STADAN STATIONS AND OOC TEST THE VOICE AND TELETYPE EQUIPMENT AT THE OOC BY MEASURING VOICE FREQUENCY FIDELITY AND DEMONSTRATING SENDING AND RECEIVING TELETYPE SIGNALS		X	X	X	X	SCNA LINKS TECHNICIAN	SCNA LINKS TECHNICIAN	READINESS TEST PROCEDURE	READINESS TEST PROCEDURE	FIXED PROCEDURE	FIXED PROCEDURE	NONE	NONE	NONE				X				TRW		
30 3	GENERATE SIMULATOR PCM HOUSEKEEPING AND DCS DATA PROVIDE SIMULATED PCM DATA TO THE NUCSON INPUT OF THE OOC SIMULATED HOUSEKEEPING DATA SHALL COVER: <ul style="list-style-type: none">• DCS DATA• SPACECRAFT REAL TIME HOUSEKEEPING DATA• SPACECRAFT REDUNDANT HOUSEKEEPING DATA		X	X	X	X	PCM SIMULATOR A TEST PROGRAM	PCM SIMULATOR X TEST PROGRAM	READINESS TEST PROCEDURE	READINESS TEST PROCEDURE	NONE	NONE	NONE	NONE	NONE				X				TRW		
30 4	CHECK COMPUTER AND DISPLAY CAPABILITY VERIFY PROPER COMPUTER PROCESSING AND CONTROL OF DISPLAYS BY READING OUT COMPLETE SIMULATED HOUSEKEEPING AND DCS DATA		X	X	X	X	OOC SEGMENT	OOC SEGMENT	READINESS TEST PROCEDURE	READINESS TEST PROCEDURE	NONE	NONE	NONE	NONE	NONE				X				TRW		
30 5	CHECK COMPUTER PERIPHERAL DEVICES VERIFY PROPER COMPUTER CONTROL AND OPERATION OF SUCH DEVICES AS A LINE PRINTER AND PROPER CONTROL OF THE COMPUTER VIA KEYBOARDS		X	X	X	X	COMPUTER SYSTEM	COMPUTER SYSTEM	READINESS TEST PROCEDURE	READINESS TEST PROCEDURE	NONE	NONE	NONE	NONE	NONE				X				TRW		
30 6	CHECK RECORDING (STRIP CHART AND TAPE) CAPABILITY VERIFY STRIP CHART RECORDER ACCURACY AGAINST THE KNOWN SIMULATED PCM DATA VERIFY TAPE RECORDER ACCURACY BY PLAYBACK OF SIMULATED DATA RECORDING INTO THE COMPUTER WHICH COMPARES AGAINST ORIGINAL DATA		X			X	PCM DATA HANDLING EQUIPMENT	PCM DATA HANDLING EQUIPMENT	READINESS TEST PROCEDURE	READINESS TEST PROCEDURE	NONE	NONE	NONE	NONE	NONE				X				TRW		

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.
		NO. 31 0		HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL	A	B	A	B	A	B			A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC. REF. SYSTEM E-3300	SOFTWARE SPEC	PERSONNEL SPEC.
		TITLE TEST NOFF SUBMIT READINESS (CONTINUED)																							
		GSFC. SPEC. PAR. NO																							
FUNCTION NUMBER	FUNCTION REQUIREMENTS																								
31 12	<u>PERFORM PRECISION MODE 1 PROCESSING</u> A SUBSET OF THE IMAGE TEST TAPE WILL BE PROCESSED ACCORDING TO SIMULATED USER REQUESTS	X	X					NOFF COMPUTER, TCS, LOR		READINESS TEST PROCEDURES				NONE		NONE						3 3 1 1 2 1 0	CP-15000		10H
31 13	<u>PERFORM PCM AND DCS PROCESSING</u> THE SIMULATED BVC TELEMETRY AND DCS DATA ARE PROCESSED IN THE COMPUTER. THE RAW DATA IS AWAY TO THE OLD MASTER DIGITAL DATA TAPE AND THE ANNOTATION DATA IS GENERATED FOR USE IN BULK AND PRECISION IMAGE PROCESSING	X	X					NOFF COMPUTER		READINESS TEST PROCEDURES				NONE		NONE						3 1 2 4	CP-12000		10H
31 14	<u>PERFORM INFORMATION MANAGEMENT FUNCTIONS</u> USE SIMULATED USER REQUESTS AND SIMULATED DATA TAPE FOR EXERCISE AND TEST OF INFORMATION MANAGEMENT SYSTEM	X	X					NOFF COMPUTER		READINESS TEST PROCEDURES				NONE		NONE						3 1 2 4	CP-12000		10H
31 15	<u>VERIFY RAW ARCHIVE TAPE</u> THE DCS IMAGES ARE READ FROM THE JET AND COMPARED WITH REFERENCE IMAGES TO VERIFY THAT THEY ARE RECORDED PROPERLY ON THE HIGH DENSITY TAPE	X	X					NOFF COMPUTER, TCS, LOR		READINESS TEST PROCEDURES				NONE		NONE						3 3 1 1 3 2 1 3 1 2 4	TBD		TBD
31 16	<u>FILM RECORD RAW IMAGES</u> THE BULK PROCESSOR RAW IMAGES ARE RUN THROUGH THE TAPE TO FILM CONTROL UNIT TO THE LOR	X						TCS, LOR		READINESS TEST PROCEDURES				NONE		NONE						3 3 1 1 3 2 1			10H
31 17	<u>FILM RECORD MSS IMAGES</u> SAME AS 31 16 FOR MSS IMAGES	X						TAPE TO FILM CON- TROL UNIT AND LOR		READINESS TEST PROCEDURES				NONE		NONE						3 3 1 1 3 1 3 3 3 1 1 3 2 1			10H
31 18	<u>VERIFY MSS ARCHIVE TAPE</u> SAME AS 31 15 FOR MSS RAW DIGITAL IMAGE	X	X					COMPUTER, BVC		READINESS TEST PROCEDURES				NONE		NONE						3 1 2 4 3 3 1 1 3 2 2	TBD		10H
31 19	<u>EVALUATE PRIORITIES AND MASTER DIGITAL TAPE</u> THE OUTPUTS OF THE FILM PROCESSING SOFTWARE FUNCTION ARE EVALUATED FOR ACCURACY AND COMPLETENESS. THE GENERATED TAPES ARE COMPARED AGAINST REFERENCE TAPE. PRIORITIES ARE EVALUATED VISUALLY	X	X					NOFF COMPUTER		READINESS TEST PROCEDURES				NONE		NONE						3 1 2 4	TBD	3 4 2 0	10H
31 20	<u>FILM RECORD PRECISION IMAGES</u> THE PRECISION PROCESSED IMAGES ARE TAKEN OFF-LINE TO THE LOR AND RECORDED	X						HBT, TCS, LOR		READINESS TEST PROCEDURES				NONE		NONE						3 3 1 1 3 2 2 3 3 1 1 3 2 1			10H
31 21	<u>GENERATE COMPUTER COMPATIBLE DIGITAL TAPE</u> GENERATE 555, 800 OR 1600 DPI COMPUTER COMPATIBLE DIGITAL TAPE FROM IMAGE DATA FOR USERS	X	X					NOFF COMPUTER		READINESS TEST PROCEDURES				NONE		NONE						3 1 2 4	TBD		10H
31 22	<u>GENERATE INFORMATION MANAGEMENT PRODUCTS</u> GENERATE LISTING, TAPES, DISPLAY OUTPUTS TO SUPPORT INFORMATION MANAGEMENT OPERATIONS	X	X					NOFF COMPUTER		READINESS TEST PROCEDURES				NONE		NONE						3 1 2 4	CP-13000		

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO. 31 0 TITLE: TEST HOPF SIGNAL READINESS (CONTINUED) GSFC, SPEC, PAR NO.		PROCESS ALLOCATION		DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.						
				A	B	A	B	A	B	A	B	A	B	A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	CDMS SPEC. SOFTWARE D-1800	SOFTWARE SPEC		PERSONNEL SPEC.					
																									HARDWARE	SOFTWARE	HARDWARE	SOFTWARE	MANUAL
FUNCTION NUMBER	FUNCTION REQUIREMENTS																												
31 23	<u>VERIFY DEV IMAGE QUALITY</u> THE DEV. IMG. IMAGES ARE CHECKED FOR QUALITY AND CONTENT (i.e. ANNOTATION, TICK MARKS, GRAY SCALE, ETC.)						LDR TECHNICIAN		READINESS TEST PROCEDURES				NONE		NONE						3 4 2 j)	18H							
31 24	<u>VERIFY MSS IMAGE QUALITY</u> SAME AS 31 23 FOR MSS IMAGES						LDR TECHNICIAN		READINESS TEST PROCEDURES				NONE		NONE						3 4 2 j)	18H							
31 25	<u>VERIFY PRECISION IMAGES</u> THE PRECISION PROCESSED IMAGES ARE CHECKED FOR QUALITY AND CONTENT (i.e. ANNOTATION, TICK MARKS, GRAY SCALE, ETC.)						LDR TECHNICIAN		READINESS TEST PROCEDURES				NONE		NONE						3 4 2 j)	18H							
31 26	<u>VERIFY COMPUTER COMPATIBLE DIGITAL TAPES</u> CHECK DIGITAL TAPES TO VERIFY THAT IMAGE DATA IS PROPERLY RECORDED			X			HOPF COMPUTER		READINESS TEST PROCEDURES				NONE		NONE				3 1 2 4	TBD	3 4 2 o)	18H							
31 27	<u>VERIFY INFORMATION MANAGEMENT DATA</u> CHECK INFORMATION MANAGEMENT PRODUCTS (e.g. LISTINGS, TAPES, DISPLAYS) TO ASCERTAIN THAT DATA IS PROPERLY RECORDED/DISPLAYED			X			HOPF COMPUTER		READINESS TEST PROCEDURES				NONE		NONE				3 1 2 4	TBD	3 4 2 o)	18H							
31 28	<u>EVALUATE DATA BASE</u> THE UPDATED DATA BASE IS COMPARED AGAINST REFERENCE DATA BASE TO VERIFY ACCURATE AND COMPLETE UPDATING			X			HOPF COMPUTER		READINESS TEST PROCEDURES				NONE		NONE				3 1 2 4	TBD	3 4 2 o)	18H							

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO. 32 0 TITLE TEST GMS READINESS GSFC SPEC PAR. NO. _____		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.
				A		B											N. A.							
				HARDWARE	SOFTWARE	HARDWARE	SOFTWARE										INSPECTION	ANAL. DATA	DEMONST.	TEST				
FUNCTION NUMBER	FUNCTION REQUIREMENTS							A	B	A	B	A	B		A	B								
32 1	VERIFY COMPATIBILITY OF STADAM/HSP/NTTF STATIONS WITH S/C SIMULATOR VERIFY THE CAPABILITY OF THE STADAM/HSP/NTTF STATIONS TO RECEIVE, PROCESS, RECORD, VIEW AND TRANSMIT DATA WHICH WAS TRANSMITTED FROM THE S/C SIMULATOR VERIFY PROPER OPERATION OF THE FOLLOWING FUNCTIONS BETWEEN THE S/C SIMULATOR AND THE STATIONS 1) RECEIVE, RECORD AND ANALYZE RBN AND MSS SIGNALS (STADAM/HSP/H) 2) RECEIVE, RECORD AND TRANSMIT RBN AND MSS SIGNALS TO GMS (NTTF) 3) RECEIVE AND RECORD PCH S/C HOUSEKEEPING DATA 4) RECEIVE AND RECORD DCS PCH DATA 5) RECEIVE AND TRANSMIT DCS PCH DATA TO THE GMS (NTTF) 6) TRANSMIT RANGE CODE TO AND RECEIVE CURRENT RANGE CODE FROM S/C 7) LOCK ON AND AUTO TRACK THE CURRENT SIGNAL FROM THE S/C SIMULATOR WHILE TRANSMITTING AT THE COMMAND FREQUENCY 8) TRANSMIT COMMANDS TO S/C SIMULATOR (HSP/STADAM)			X								NONE		LOCATION OF S/C SIMULATOR (ORKE-SIGHT TOWER/IN STATION/VNA)	NONE				X		SPACE-CRAFT SIMULATOR SPEC			TRW
32 2	VERIFY COMPATIBILITY OF STADAM/HSP/NTTF WITH THE GMS VERIFY THAT DATA TRANSMITTED OVER PASSON FROM THE REMOTE STATIONS IS COMPATIBLE WITH PROPER OPERATION OF THE GMS. THE DATA REQUIREMENTS OF THE GMS, INCLUDING VIDEO FROM RTT, VERIFY OPERATIONAL VOICE LINKS BETWEEN GMS AND THE REMOTE STATIONS AS WELL AS OPSGON/NETRIC			X	X	X						VARIABLE PROCEDURE		MANUAL SWITCH OF DATA LINKS VERSUS COMPUTER CONTROL	NONE				X		SPACE-CRAFT SIMULATOR SPEC	CP-1013		TRW
32 3	DEMONSTRATE CAPABILITY OF GMS TO PROVIDE USER DATA THE FOLLOWING SHALL BE PRODUCED AND THE REACTION TIME AND ACCURACY VERIFIED 1) DCS DATA IN VARIOUS FORMATS 2) RBN AND MSS INGEST			X	X	X						VARIABLE PROCEDURE		NONE	NONE				X		SPACE-CRAFT SIMULATOR SPEC			TRW/IBM/ITER
32 4	DEMONSTRATE CAPABILITY OF GMS TO STORE AND HANDLE ALL DATA DEMONSTRATE OR PRESENT THE METHODOLOGY FOR PERFORMING THE FOLLOWING 1) FILE, STORE AND REPRODUCE TAPES, PHOTOS AND DATA 2) UTILIZE TAPE FILE TO DEMONSTRATE IMAGE ANALYSIS CAPABILITY (ANALYTICALLY OR ACTUAL PERFORMANCE) 3) LOGGING AND CATALOGING TECHNIQUES			X	X	X						VARIABLE PROCEDURE		NONE	NONE				X		SPACE-CRAFT SIMULATOR SPEC			TRW/IBM/ITER

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP
		NO	32 0	A		B		A	B	A	B	A	B	A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC.	SOFTWARE SPEC.	PERSONNEL SPEC.		
		TITLE	TEST GDHS READINESS (CONTINUED)	HARDWARE	MANUAL	HARDWARE	MANUAL																		
		GSFC SPEC. PAR. NO																							
FUNCTION NUMBER	FUNCTION REQUIREMENTS																								
32 5	DEMONSTRATE RMP MAINTENANCE CAPABILITY DEMONSTRATE OR PRESENT METHODOLOGY FOR MAINTAINING THE RMP EQUIPMENT INCLUDING FAULT ISOLATION, REPAIR AND RETEST FOR OPERATIONAL READINESS PRESENT FOR APPROVAL, SPARES PROVISIONING AND STORAGE TECHNIQUE		X	X	X			MAINTENANCE PLAN, OPERATING PER- SONNEL AND TEST EQUIPMENT		AUTOMATIC AND MANUAL			OPER END DECISION MAKING		NONE		NONE		X					TSM/IBM/ ITER	
32 6	DEMONSTRATE GDC MAINTENANCE CAPABILITY DEMONSTRATE OR PRESENT METHODOLOGY FOR MAINTAINING THE GDC EQUIPMENT INCLUDING FAULT ISOLATION, REPAIR AND RETEST FOR OPERATIONAL READINESS PRESENT FOR APPROVAL, SPARES PROVISIONING AND STORAGE TECHNIQUE		X	X	X			MAINTENANCE PLAN, OPERATING PER- SONNEL AND TEST EQUIPMENT		AUTOMATIC AND MANUAL			OPER END DECISION MAKING		NONE		NONE		X					TSM	
32 7	DEMONSTRATE GMS FACILITIES CAPABILITIES DEMONSTRATE OR PRESENT METHODOLOGY FOR MAINTAINING THE GMS FACILITY INCLUDING MONITORING FACILITY STATUS, PERSONNEL FACILITIES, LABORATORY FACILITIES, OFFICE FACILITIES, AND HEALTH AND SAFETY DESIGN		X	X	X			OPERATING AND MAINTENANCE PLANS, PERSONNEL AND GMS FACILITY		AUTOMATIC AND MANUAL			OPER END DECISION MAKING		NONE		NONE		X					TSM	
32 8	SUPPORT LUNAR OPERATIONS AND PROVIDE GMS GDS FOR 30 DAYS		X	X	X			OPERATING AND MAINTENANCE PLANS, PERSONNEL AND GMS FACILITY						NONE		NONE		X						TSM	
32 9	GDS/MDO ACCEPTANCE OF GDS																	X						TSM/PASA	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.	
		NO. 33 9	TITLE: RECEIVE WIDEAREA TAPES	A		B		A	B	A	B	A	B		A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC.	SOFTWARE SPEC.		PERSONNEL SPEC.
		GSFC. SPEC. PAR. NO. 2.14.3.1.1	HARDWARE	MANUAL	HARDWARE	MANUAL																			
FUNCTION NUMBER	FUNCTION REQUIREMENTS	HARDWARE	MANUAL	HARDWARE	MANUAL	A	B	A	B	A	B	A	B		A	B									
33 1	LOG IN WIDEAREA TAPES. PHYSICALLY RECEIVE HIBC AND WABSW DIBD DATA		X			DATA CLERK		WILL ROOM PROCEDURES		FIXED	PRECOORDR			NONE	NONE		X						3 4 2 k)	104	
33 2	SOUL SHY AND PSS TAPES. PREPARE TAPES FOR TASKS 19 0, 20 0		X			DATA CLERK		OPERATIONS GEN- TDRM PROCEDURES		FIXED	PRECOORDR			NONE	TAPES IDENTI- FICATION PROCEDURES		X						3 4 2 k)	104	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.		RESP.		
		NO 24 0		TITLE PROCESS USER QUERIES.		GSFC. SPEC. PAR NO 7 14 2 1 2		A	B	A	B	A	B		A	B	N. A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	CODE SPEC. NOV 1963 0-1380	SOFTWARE SPEC.	PERSONNEL SPEC.	
FUNCTION NUMBER	FUNCTION REQUIREMENTS			HARDWARE	SOFTWARE	MANUAL	HARDWARE	SOFTWARE	MANUAL																
34 1	LOG IN DETERMINE RETRIEVAL AND OUTPUT REQUIREMENT. SELECT COURSE OF ACTION TO USE: REWRITE PROGRAMS, STANDARD APPLICATION PROGRAMS, OR TO DEVELOP NEW APPLICATION PROGRAM.					X			X	DATA ANALYST	DATA ANALYST	USER'S MANUAL OF STANDARD QUERIES AND OUTPUTS CATALOG OF DATA FILE CONTENTS	USER'S MANUAL OF STANDARD QUERIES AND OUTPUTS CATALOG OF DATA FILE CONTENTS	OPEN END DECISION MAKING		NONE	MANUALS DATA CATALOG	MANUALS DATA CATALOG	X					3 4 2r	IBM
34 2	PREPARE FILE QUERY PREPARE INPUTS FOR STANDARD APPLICATION. SUBMIT JOB REQUEST TO PRODUCTION CONTROL. (REFER TO 17 A)			X		X	X	X		CARD KEYPUNCH DATA ANALYST	CARD KEYPUNCH DATA ANALYST	USER'S APPLICATION MANUAL	USER'S APPLICATION MANUAL	VARIABLE PROGRAMME		NONE	MANUALS	MANUALS	X			CONFIDENTIAL OR 4FC		3 4 2r	IBM
34 3	SEARCH DATA FILES FOR INFORMATION PERFORM RETRIEVAL AND OUTPUT OF DATA				X			X		IMP AND APPLICATIONS SOFTWARE	IMP AND APPLICATIONS SOFTWARE	APPLICATIONS LIBRARY	APPLICATIONS LIBRARY			NONE	APPLICATIONS PROGRAMS IMP SOFTWARE	APPLICATIONS PROGRAMS IMP SOFTWARE	X			CP-19013			IBM
34 4	LOG OUT REVIEW RESULTS AND PERFORM CORRECTIVE ACTIONS AS NECESSARY. RESUBMIT WORK REQUEST OR DELIVER VALID RESULTS TO USER THROUGH PRODUCTION CONTROL.			X		X	X	X		CARD KEYPUNCH DATA ANALYST	CARD KEYPUNCH DATA ANALYST	ERROR MESSAGE MANUAL	ERROR MESSAGE MANUAL	VARIABLE PROGRAMME		NONE	MANUALS	MANUALS	X			CONFIDENTIAL OR 4FC		3 4 2r	IBM

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG. NO. 35 C TITLE SIMULATE GDHS OPERATIONS GSFC. SPEC. PAR NO. (7 14 2 2)		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS		DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.	
				HARDWARE SOFTWARE	MANUAL	HARDWARE SOFTWARE	MANUAL	A	B	A	B	A	B	A	B	A	B	N. A.	INSPECTION	ANAL. DATA	DEMONSTR.	TEST	GDHS SPEC.	SOFTWARE SPEC.		PERSONNEL SPEC.
FUNCTION NUMBER	FUNCTION REQUIREMENTS																									
35 1	PREPARE SCENARIO DEVELOP A DESCRIPTION OF SIMULATED OPERATIONAL ACTIVITIES/REQUESTS FOR A TYPICAL SATELLITE CONTACT				X		X	MISSION PLANNING PERSONNEL	MISSION PLANNING PERSONNEL	CCC OPERATIONS DIRECTOR	CCC OPERATIONS DIRECTOR	OPEN END DECISION MAKING	OPEN END DECISION MAKING	SOPHISTICATION OF SIMULATION SOFTWARE				X							TRM	
35 2	TRANSFORM SCENARIO INTO SPACECRAFT COMMANDS TRANSFORM SPACECRAFT ACTIVITIES AND USER REQUESTS INTO A COMMAND LIST			X	X	X	X	GROUND SCHEDULING FUNCTION SC/PPL UTILIZATION SCHEDULING FUNCTION COMMAND GENERATION & VERIFICATION FUNCTION OPERATION MANUAL	GROUND SCHEDULING FUNCTION SC/PPL UTILIZATION SCHEDULING FUNCTION COMMAND GENERATION & VERIFICATION FUNCTION OPERATION MANUAL	MISSION PLANNING, GROUND, AND SATELLITE OPERATIONS PERSONNEL	MISSION PLANNING, GROUND, AND SATELLITE OPERATIONS PERSONNEL	OPEN END DECISION MAKING	OPEN END DECISION MAKING					X					CP-3000 CP-3000		TRM	
35 3	PROVIDE SIMULATED SPACECRAFT SIGNALS PROVIDE SIMULATED SATELLITE HOUSEKEEPING, AND OCS, SIGNAL CAPABILITY			X	X	X	X	SPACECRAFT SIMULATION EQUIPMENT	SPACECRAFT SIMULATION EQUIPMENT	HARDWARE TECHNICIAN	HARDWARE TECHNICIAN	VARIABLE PROCEDURE	VARIABLE PROCEDURE					X				SPACE- CRAFT SIMULATOR SPEC			TRM	
35 4	TRANSMIT SPACECRAFT COMMANDS TRANSMIT COMMAND LIST TO THE STATION/USER STATION			X	X	X	X	TRANSMISSION EQUIPMENT COMMAND GENERATION	TRANSMISSION EQUIPMENT COMMAND GENERATION	GROUND OPERATIONS PERSONNEL	GROUND OPERATIONS PERSONNEL	VARIABLE PROCEDURE	VARIABLE PROCEDURE						X			SPACE- CRAFT SIMULATOR SPEC	CP-3004		TRM	
35 5	RECEIVE AND PROCESS SIMULATED SPACECRAFT PCM RECEIVE AND PROCESS SHALL INCLUDE THE FOLLOWING DATA HANDLING EQUIPMENT, THEIR DATA DISPLAYS AND PERIPHERAL DEVICES SPACECRAFT HOUSEKEEPING PCM OCS PCM			X	X	X	X	PCM PCM TM PROCESSING FUNCTION SENSOR & OCS EVALUATION FUNCTION	PCM PCM TM PROCESSING FUNCTION SENSOR & OCS EVALUATION FUNCTION	CCC SOFTWARE	CCC SOFTWARE	VARIABLE PROCEDURE	VARIABLE PROCEDURE						X			SPACE- CRAFT SIMULATOR SPEC	CP-3000		TRM	
35 6	EVALUATE OPERATIONS EVALUATE CCC SUBSYSTEM RESPONSE TO SIMULATED OPERATIONS				X		X	GROUND, SATELLITE OPERATIONS PERSONNEL	GROUND, SATELLITE OPERATIONS PERSONNEL	CCC OPERATIONS DIRECTOR	CCC OPERATIONS DIRECTOR	OPEN END DECISION MAKING	OPEN END DECISION MAKING												TRM	

REQUIREMENTS ALLOCATION SHEET		FUNCTIONAL FLOW DWG.		PROCESS ALLOCATION				DEVICE IDENTIFICATION		CONTROL		PERSONNEL		TRADEOFFS	DEVELOPMENT REQUIRED		VERIFICATION METHOD(S)				PARAGRAPH NOS.			RESP.	
		NO. 36 0		A		B		A	B	A	B	A	B	A	B	N.A.	INSPECTION	ANAL. DATA	DEMONST.	TEST	GDHS SPEC.	SOFTWARE SPEC.	PERSONNEL SPEC.		
		TITLE	ESTABLISH OCC OPERATIONS PLAN AND READINESS	HARDWARE	SOFTWARE	HARDWARE	SOFTWARE																		MANUAL
		GSFC. SPEC. PAR. NO	(7 14 2)																						
FUNCTION NUMBER	FUNCTION REQUIREMENTS		HARDWARE	SOFTWARE	HARDWARE	SOFTWARE	MANUAL	A	B	A	B	A	B		A	B									
36 1	PREPARE PERIODIC OPERATIONS ACTIVITIES DEFINE PERIODIC ACTIVITIES BASED ON CURRENT OPERATIONAL STATUS			X		X		OCC OPERATIONS DIRECTOR	OCC OPERATIONS DIRECTOR					OPEN END DECISION MAKING	OPEN END DECISION MAKING			X						TRN	
36 2	IDENTIFY SPECIAL READINESS PROCEDURES DEFINE UNIQUE READINESS TEST REQUIREMENTS (IF ANY) FOR EACH TEST PERIOD			X		X		OCC OPERATIONS DIRECTOR	OCC OPERATIONS DIRECTOR	PROCEDURES MANUAL	PROCEDURES MANUAL			OPEN END DECISION MAKING	OPEN END DECISION MAKING			X						TRN	
36 3	VERIFY OCC HARDWARE, SOFTWARE AND PERSONNEL READINESS REVIEW OPERATING EQUIPMENT CHECK LIST, TRANSMIT AND PROCESS TEST SIGNALS, MONITOR TEST DISPLAYS AND ALARMS. TEST DATA INPUTS TO VERIFY COMMANDING FUNCTION AND SOFTWARE ROUTINES. ISSUE SML-011 OF NECESSARY PERSONNEL.			X		X		OCC OPERATIONS PERSONNEL	OCC OPERATIONS PERSONNEL					OPEN END DECISION MAKING	OPEN END DECISION MAKING				X					TRN	
36 4	VERIFY READINESS OF OPERATIONAL INTERFACES VERIFY COMMUNICATION LINKS WITH REMOTE STATIONS. TEST REAL TIME DATA AND COMMAND LINKS VIA PRE-RECORDED, SIMULATED DATA TRANSMISSIONS. VERIFY READINESS OF HUPP. TEST CONSOLE/COMPUTER INTERFACE FOR READINESS TO ACCEPT MANUAL DATA INPUT.			X		X		OCC OPERATIONS PERSONNEL	OCC OPERATIONS PERSONNEL					VARIABLE PROGRAMME	VARIABLE PROCEDURE				X					TRN	
36 5	INSTITUTE CONTINGENCY PROCEDURES IF REQUIRED PROCEDURE DEFINITIONS FOR FAULT ISOLATION AND COMPONENT REPAIR			X		X		OCC OPERATIONS PERSONNEL	OCC OPERATIONS PERSONNEL	PROCEDURES MANUAL	PROCEDURES MANUAL			OPEN END DECISION MAKING	OPEN END DECISION MAKING				X					TRN	